# Big Tech Oligopolies, Keith Cowling, and Monopoly Capitalism

*Cambridge Journal of Economics* 2022, **46,** 1205–1224
https://doi.org/10.1093/cje/beac062



# Big Tech Oligopolies, Keith Cowling, and Monopoly Capitalism

Martin Conyon, Michael Ellman, Christos N. Pitelis, Alan Shipman, and Philip R. Tomlinson*

This Special Issue of the Cambridge Journal of Economics (CJE) marks and celebrates forty years since the publication of Keith Cowling's (1982) seminal Monopoly Capitalism, which synthesised, updated, and extended the earlier work of scholars such as Steindl (1952), Baran and Sweezy (1966), Hymer (1970, 1972) and Kalecki (1971). Since the publication of Monopoly Capitalism, the critical transformative event has been the latest (fourth) technological revolution and the emergence of Big Tech companies such as Facebook, Apple, Amazon, Netflix and Google (aka FAANGs), alongside Microsoft and so-called 'gig' or 'sharing economy' firms (such as Uber, Airbnb). While initially regarded as exemplars of the dynamics of contemporary capitalism, in recent years there has been a public backlash against Big Tech, and its impact and influence within the global economy. Indeed, several commentators have raised concerns that beneath the veneer of Big Tech lies potentially insidious business models and practices that have led to a rise in corporate power and the monopolisation of markets. These criticisms, however, largely ignore the contributions of earlier scholars of monopoly capitalism. This Special Issue addresses this oversight with a series of papers re-examining and extending the work of Cowling and others in the monopoly capitalism tradition, in the specific context of Big Tech. The Introduction opens with a portrait of Keith Cowling, as a person and his scholarly contribution to the field. It then provides a critical assessment of the papers in this Special Issue. In the Epilogue, we summarise and conclude.

*Key words:* Monopoly Capitalsm, Big Tech oligopolies, Corporate Power, Keith Cowling

## Introduction

This Special Issue of the *Cambridge Journal of Economics* (CJE) marks and celebrates forty years since the publication of Keith Cowling's (1982) seminal monograph[1]. By

* Bentley University, Massachusetts, MA 02452, USA and The Wharton School, University of Pennsylvania, Philadelphia, PA 19104, USA (MC); Emeritus Professor of the University of Amsterdam, Faculty of Economics and Business, Netherlands (ME); Leeds University Business School, University of Leeds, LS2 9JT, UK and Life Fellow, Queens' College, University of Cambridge, CB3 9ET, UK (CNP); Open University, Milton Keynes, MK7 6AA, UK (AS); Centre for Governance, Regulation & Industrial Strategy, School of Management, University of Bath, BA2 7AY, UK (PRT).

[1] Chosen by Keith's daughter, Lucy, the book's cover image was of a soup tin with *Monopoly Capitalism* emblazoned across the front (in a style reminiscent of Andy Warhol's 1962 painting 'Campbell's Soup Cans'). Reflecting Keith's admiration for pop art, the cover invokes images of (market) power, advertising and mass production—issues that Keith would pursue throughout his academic career.

cross-fertilising concepts from neoclassical Industrial Organisation (IO) and radical political economy, *Monopoly Capitalism* synthesised, updated, supported and extended the earlier work by scholars such as Steindl (1952), Baran and Sweezy (1966), Hymer (1970, 1972) and Kalecki (1971). These scholars had drawn on earlier contributions notably by Marx (1867/1959) on the concentration and centralisation of capital, Hilferding (1910), on financial capital and its tendency to fuse with industrial capital in what he termed Finance Capital, Lenin (1917) on the internationalisation of capital and imperialism, and Luxemburg (1913/2015) on internationalisation, realisation crises and international (under)development. Like these scholars, Cowling had become concerned about the growing level of industrial concentration in modern capitalist economies and the concomitant potential for acquisition and abuse of corporate power, which he argued was detrimental to the public interest and would lead to stagnation.

*Monopoly Capitalism* argued that rising industrial concentration affects prices, distribution, and demand in the broader economy. Specifically, the output-weighted average price-cost margin rises when industry concentration does, a consequence of more effective collusion between firms. Advertising by incumbent firms exacerbates this process by reducing the industry price elasticity of demand (Cowling *et al.*, 1975). A rise in the degree of monopoly power had macro-level distributional consequences and implications for aggregate demand. This is because the growth in the size of the potential surplus (which firms seek to generate) can lead to a reduction in the relative income share of workers and potentially to a 'realisation crisis', where firms are unable to 'realise' this potential surplus as profit owing to deficient demand. Consequently, firms experience an increase in unplanned excess capacity; this serves as a deterrent to potential entrants and strengthens the threat of retaliation among the incumbent oligopoly group. This bolsters the degree of monopoly and collusion, especially during slumps (Cowling, 1983; Branston *et al.*, 2014). Stagnation and crisis are emblematic of a monopoly capitalism system (see also Pitelis, 2022; Sawyer, 2022).

The 'monopoly capital' school of Baran and Sweezy (1966), Hymer (1970, 1972), Cowling (1982), and others described and anticipated several significant characteristics and trends of modern capitalism. Cowling's *Monopoly Capitalism* was able to capture the underlying reality of a concentrated industrial structure and its implications for the macroeconomy in a unified overarching framework and help anticipate essential contours of future developments. However, Cowling and the monopoly capital school could not have foreseen the precise way their predictions were to materialise nor their full consequences on economic, social, and environmental performance. Since the publication of *Monopoly Capitalism*, the critical transformative event has been the latest (fourth) technological revolution. Over the past decade, 'high-tech' companies such as Facebook (Meta), Apple, Amazon, Google (Alphabet), Microsoft and Netflix (often acronmised as FAANG or GAFAM) and so-called 'gig' or 'sharing economy' firms such as Uber, Airbnb and other so-called 'unicorns' have emerged and now command some of the highest valuations in the world. In some respects, these successes are a testament to the dynamics of contemporary capitalism, where disruptive innovations and new technologies facilitate new entrants to challenge established market positions (along the lines of Schumpeter or Hayek). Indeed, the rise of high-tech and the 'gig-sharing economy' were initially considered—by some observers—as the means to open global markets to greater competition, democratise the economy and enhance public welfare (Graham, 2001).

Nevertheless, in more recent years there has been a public backlash with concerns about the rise of Big Tech, its impact, and its influence within the global economy. Several commentators argue that beneath the corporate success of many a Big Tech company lie potentially insidious business models and practices that have led to a rise in corporate power and the monopolisation of markets. This market dominance is evident not only within these corporations' immediate domains, such as communications, Information Technology (IT), and digital media but also in other sectors—notably as platform technologies in both the private and public sectors. Moreover, the concentration of dominant global players in the technology sector has been associated with—among other things—stifling competition. Big Tech firms have bought up smaller rivals. They have led to a diminution of the tax base through creative accounting practices and outright tax evasion. Big Tech are accused of promoting poor work practices/precarious employment, and exacerbating the shift in income distribution from labour to capital, clearly highlighted in the work of Piketty (2014). These factors, in turn, could underpin and contribute to the recent economic malaise of Western economies.

In the public sphere, there are also concerns about the role of Big Tech in undermining democracy, with its links to political actors (Zingales, 2017), its role in propagating fake news, and the misuse of private data to influence elections (Gordon, 2015). Alongside their Chinese counterparts, the so-called BATs (Baidu, Alibaba, and Tencent), Big Tech have also been held responsible for the rise of surveillance capitalism (Foroohar, 2019; Zuboff, 2019). While Big Tech enjoys continuing success and increasing market dominance, much of Europe and other developed economies are mired in stagnation, falling real wages and the newly employed poor, also known as the precariat. They are also still struggling to recover from the 2008 Great Financial Crisis. At the same time, anti-trust and industrial policies advocated by Cowling and others (e.g., Chang, 1993; Pitelis, 1994) and initially seen as fringe ideas became the policy focus of recent UK Conservative governments (Bailey *et al.*, 2015). Strategic trade policies also discussed by Cowling and Sugden (1998b), were at the heart of US President Trump's administration and have been largely retained under President Biden. The European Union is taking a robust stance against established high-technology companies. In the USA, a critique of conventional anti-trust whose ideas echo those of Cowling has risen to academic and political prominence (Khan, 2017; Petit and Teece, 2021; Piteli and Pitelis, 2022).

These are salient issues worth revisiting, understanding, and extending in the context of the earlier contributions to the monopoly capital school. Recent mainstream critics of Big Tech have largely ignored the contributions of earlier scholars of monopoly capitalism—hence exacerbating the tendency of many an economist to explain *ex-post* rather than employ fit-for-purpose theory and method to predict *ex-ante*.

In what follows, we first present a portrait of Keith Cowling as a person. Then, we look at his critical scholarly contribution. Next, we discuss his monograph *Monopoly Capitalism*. We then provide a critical assessment of the contributions in this Special Issue. In the Epilogue, we summarise and conclude[2].

[2] We would like to pay tribute to the late Steve Davies, one of the UK's leading industrial economists, and a student at Warwick during the early 1970s. Steve was well known to Keith, and contemporaries in industrial economics circles. Before his sad passing earlier this year, Steve contributed a joint article to this Special Issue (Armoogum *et al.*, 2022).

## Keith Cowling (1936–2016): person and life

The commentary below derives from our conversations with Keith's friends, colleagues and family and our own personal recollections of conversations and engagements with Keith, over several decades (see also Shattock, 2003; Pitelis and Tomlinson, 2017).

### *Early life and career*

Keith Cowling was born into a working-class family in Scunthorpe in 1936. He was the son of a train driver, George Cowling. His mother, Nellie (née Raby), was an embroiderer. Keith went to the local grammar school and showed great prowess at football, being a triallist with Scunthorpe United FC (of which he remained a life-long supporter, along with Coventry City), before studying agricultural sciences at Wye College in Kent, a branch of the University of London.

At Wye, Keith's academic interests moved toward economics. In the late 1950s, he won a Ph.D. scholarship to study agricultural economics at the University of Illinois in Chicago. Keith enjoyed his time in the USA. During his Ph.D., he shared lodgings with Zvi Griliches and formed many life-long friendships. He also developed a fondness for American jazz and an interest in US baseball.

After completing his doctorate, Keith returned home and began his academic career in 1961 at the University of Manchester. He quickly established himself as a leading thinker and scholar and was promoted to Senior Lecturer 4 years later. At Manchester, Keith met his future wife, Barbara, who was also employed as a research assistant. Much of Keith's early research was empirical. Econometric models in the early 1960s were estimated using the University's mainframe computer. In those days, researchers would bring their data cards to be keyed into the mainframe and collect their results the following day. Keith and Barbara met often on such occasions, and eventually married in 1966. The couple were interested in politics, often attending the Campaign for Nuclear Disarmament (CND) and other political rallies. At around this time, in nearby Stockport, Keith became a Labour councillor in a hitherto Conservative ward: by all accounts, he was very persuasive on the doorstep!

### *University of Warwick*

In 1966, Keith moved to the then-new University of Warwick to take up a Readership, an appointment described by one referee as 'avant-garde' (Shattock, 2003, p. 286). It was at Warwick that Cowling switched his research interests towards the emerging field of industrial economics, that later morphed into IO. In 1970, at the relatively young age of 33, he was appointed the Clarkson Chair in Industrial Economics.

Keith led from the front as one of the few Chairs in the new Department for Economics. He played a significant early role in its transformation from being a relatively small department to becoming one of the world's leading economics faculties. The early to mid-1970s were an especially vibrant time for industrial economics in the Department and counted a young Oliver Hart (a future Nobel Laureate), and future Professors Steve Davies and Michael Waterson among its postgraduate students. From 1975 to 1978, Keith was Chairman of the Department and 'Professor responsible' (for appointments). He was instrumental in persuading the University to invest in new Professorships and make some astute appointments, which sowed the seeds of the Department's development. These appointments included Ken Wallis, Nick

Stern, Marcus Miller and Robert Skidelsky, who would all have distinguished careers at Warwick and elsewhere. In a short biography commemorating Keith's time at Warwick, Michael Shattock (Warwick's long-serving Academic Registrar) recalled how Keith was keen to have top-ranked economists and assessors on interview appointments and rigorous internal promotions panels. The latter was not always internally popular, and in some ways in apparent contrast to his own ideological convictions and preferences for broader political economy. As history showed in other places such as Cambridge, newly appointed leading neoclassical scholars were less open-minded about diversity of perspectives and could eventually look down at alternative views and their proponents. Keith was keen to establish and safeguard the reputation of the Department (Shattock, 2003, p. 289), and less concerned about such matters. It helped that he could also publish in leading neoclassical focused journals and also be in demand by leading Universities, such as Yale.

Beyond his contribution to the Economics Department, Keith undertook substantial roles across the University, being a member of the Senate for 21 of his 36 years at the University, Chairman of the Faculty of Social Studies Board and on various other central policy and executive committees. During the early 1980s, he was vital in persuading the University to employ metrics to compare the performance of departments against internal and national data; this led to improved decision-making and efficiencies. In the 1990s, he also encouraged Warwick to raise external alumni funding (Shattock, 2003). Paying tribute, Shattock (2003, p. 285) notes *'Keith was in fact much more than a good university citizen and his contribution over 36 years is one of the reasons why the Economics Department and the University occupy the position that they do'*. At Warwick, Room S2.77, in the Faculty of Social Sciences was re-named as the 'Cowling Room' in the mid-1970s and remains a testament to Keith's significant contribution to the University.

Keith was a sought-after international scholar—surgery for a severe stomach ulcer[3] meant that he once reluctantly had to turn down an opportunity to take up his friend and future Nobel Laureate Oliver Williamson's vacant Chair at Yale. He made many life-long friends of international scholars, including many who spent time at Warwick on sabbatical. These included future Nobel Laureate, Robert Solow (who visited Warwick in the late 1960s), industrial economists such as Harry Bloch (Curtin University), and those that would later become key figures in the European Union Network for Industrial Policy (EUNIP)—Johan Willner (University of Abo Akademi), Hans Schenk (University of Utrecht) and Patrizio Bianchi (University of Ferrara, and a recent Italian minister for education). Keith 'officially' retired from Warwick in 2003, but he continued to write, co-editing a book on industrial policy (Bailey *et al.*, 2015) and regularly using an office in the Department until late 2015. In a festschrift edited by Michael Waterson (2003), several of Keith's former students and colleagues celebrated Keith's contributions to IO, which was also marked by a dinner at the University of Warwick. In 2017, Pitelis and Tomlinson (2017) published a posthumous tribute article in the *International Journal of Industrial Organisation* (IJIO), the journal Keith founded in 1983.

[3] This occurred in the days before micro-surgery, and Keith retained a 'shark bite' on his stomach for the remainder of his life.

*Coventry*

Keith and Barbara embraced life in Coventry and raised their family in the city. Their third child, Lucy, was born there and joined her older siblings, brother Marc (now Professor of Economics at Oxford Brookes), and sister Lee, who had both been born in Manchester. Keith and Barbara became avid supporters of Coventry City Football Club; they were deeply proud of the club's famous FA Cup triumph against Tottenham Hotspur in 1987. Keith loved his football. At Warwick, he regularly played departmental five-a-side games with colleagues and Ph.D. students. The treatment of all Ph.D. students as equals in all respects was a key characteristic of Warwick economics, with daily exchanges of ideas in the common room during coffee. There a mere mortal could ask the opinion of an economics deity on equal grounds and receive an answer. Getting a *'I don't know for sure'* response by a leader in the field could be so reassuring. The experience was priceless. The common room was also where one would sign up for the regular five-a-side football game. Keith was as committed to fair and competitive play as to his academic writing. He was not alone—on one occasion a young Ph.D. student performed a Kung-Fu exhibition in the hope of deterring a staff member from overly aggressive tackling!

Keith and Barbara were immensely protective of their adoptive city. At one University Open Day, a prospective student disparagingly asked, *'If it was ok to live in Coventry?'* to which Keith turned around and gave a stone-cold glance with a quick response, *'Well, I live there!'*. Both were deeply involved in many aspects of the local community, exemplified by Barbara being at the forefront of local recycling initiatives through her pivotal role in Coventry's community recycling waste enterprise. Keith was involved in Coventry's local jazz and wider music scene and occasionally promoted local gigs, including a young Pauline Black of the band 'The Selector'. Friends, colleagues, students and acquaintances were always welcome at their home in Earlsdon, and they were always prepared to help others. Their parties at Earlsdon had become a fixture. The involvement of Ph.D. students provided a huge boost to them, and often a surprise too for their informality and democratic ethos. More surprises were in store for anyone who might have mistaken democracy for lack of rigour, let alone slack. Keith's stare sufficed. In the view of one of his Ph.D. students, it could outmatch Clint Eastwood any time. Barbara and Keith were also keen ramblers and formed/joined local walking groups, and, in the Kinder Scout spirit, they were well prepared to defend their rights of way.

As Robin Naylor (Professor of Economics, Warwick) recalls:

> *In 1987, Keith and Barbara instigated a 'Left Boot Club' as an escape route from the stresses associated with Margaret Thatcher's third election victory. Under its auspices, friends would meet at their house monthly to head off on local and regional hikes. On these walks, it would be fascinating to hear Keith describe local agriculture, land use, and infrastructural developments, informed by his time as a young farmer and an agricultural economist. These walks were great fun for the participants but less so for any landowner who might attempt to block a public right of way. I can recall at least two occasions when Keith was unperturbed by proprietorial farmers attempting to stop us in our tracks - on one such occasion notwithstanding a rifle being held threateningly in our direction. In each case, led by Keith, the Left Boot Club marched resolutely on.*

*Ph.D. supervisor and mentor*

At Warwick, Keith was a highly regarded and 'one-of-a-kind' Ph.D. supervisor. There is no complete record of Keith's former Ph.D. students. However, when he once overheard—in the Warwick economics common room—a visiting academic boast of *'graduating my twentieth Ph.D. student'*, Cowling reportedly quipped, *'I stopped counting at 100!'*.

Keith supervised and worked with eminent scholars, including Michael Waterson, the late Paul Geroski and long-time collaborator Roger Sugden. Keith always encouraged his and other students, offering feedback, advice and reassurance where needed, especially in research seminars and conferences. This was always done in a helpful and sincere way, with no hint of superiority. His students recalled the boost they received when they heard Keith saying, '*this is an important idea/finding*'. He could also be impatient with big headedness and with being dismissive of important ideas, by neoclassical economists and his own critics. While an editor of IJIO he accepted for publication a rather scathing critique of his work (Fine and Murfin, 1984).

His postgraduate course at Warwick was entitled 'Industrial Structure and the Macro Economy', and was always very well received, especially among international students. In the course, Keith shared his ideas and research, but also that of his collaborators and critics, and the research of his former Ph.D. students which he widely celebrated. Occasionally, he would use mathematics to demonstrate a Kaleckian model ('Keynes+class'), but then quip, '*enough of the maths, this is an economics course, not an exercise in algebra!*'.

Many have fond memories of Keith, and he could sometimes be playful. Ben Ferrett (now a Senior Lecturer at the University of Loughborough) recalled that Keith occasionally teased him for being '*very Cambridge'* and *'far too New Labour*' for his (Keith's) tastes but said he was never belittling. This teasing also extended to his son, Marc, who had given an entrepreneurship seminar at Warwick. Keith was the first to publicly comment that he '*would have started his analysis, where (Marc) had finished his!*'. Keith was always interested in the 'big picture', yet was a pioneer of micro foundations, where the micro referred to the firm.

Many of Keith's former students have gone on to successful careers in academia and/or economics roles in the public and private sectors. Some, like Roger Sugden and Philip Tomlinson became long-term collaborators.

### *Political and economic outlook*

Keith was a radical political economist, and this was reflected in his left-wing political views. He was one of the 364 economists who signed the now infamous letter to *The Times* criticising Geoffrey Howe's 1981 budget that cut public expenditure and hiked taxes in the depths of the recession. While monetarists subsequently ridiculed this letter, as GDP soon began to recover (see Congdon, 2006), output growth remained significantly below trend throughout the decade (Nickell, 2006). Moreover, the budget might well have exacerbated poverty, socio-economic and regional inequalities that remain to this day.

During the mid-late 1980s Keith played a key role in Labour Party policy, helping to establish an informal 'think tank' with Bryan Gould and which was subsequently taken up by John Smith, then Labour Leader of the Opposition and closet Labour supporters in industry (Cowling *et al.*, 1989; Cowling and Sugden, 1992). He was a long-term advocate of industrial policy, which he pursued in his academic interests and, at this time, sought to influence the Labour Party's policy position on this issue.

Keith was dismissive of the Blair project and generally disenchanted with vacuous ideas and the spin of modern politics. In 2010, over lunch, he was asked what he thought of the new Conservative and Liberal Democrat Coalition government. His response was swift but prescient: *'I think this government will destroy Europe—I believe that to be its intention'*.

Keith never let political differences or economic disagreements cloud his professional relationships and/or influence his friendships. He had many friends and colleagues from across the political spectrum. Ben Fine (Emeritus Professor at the School of Oriental and African Studies), though highly critical of Cowling's approach to monopoly capitalism, remained a life-long friend and fondly recalled hosting Keith and Marc at Highbury in 1977 for an Arsenal versus Coventry FA Cup tie.

*Key scholarly contributions*

Keith was informed and motivated by the real-life challenges of ordinary people and businesses, and he sought solutions to enhance social welfare through theory and empirical evidence. He was arguably the father figure of British Industrial Economics, particularly regarding mergers and acquisitions, advertising, the theoretical determination of Structure, Conduct Performance (SCP) relationships and the welfare losses of monopoly power. As one of Europe's foremost industrial economists, Keith became an early President of the European Association for Research in Industrial Economics (EARIE), and the founding editor of the *International Journal of Industrial Organisation* (IJIO), a leading journal in the field. In the early 1990s, with Roger Sugden and others, Keith also co-founded the European Network on Industrial Policy (EUNIP).

Throughout, Keith sought to cross-fertilize neoclassical and more critical, radical approaches to economics. His conceptual, mathematical and empirical rigour commanded respect and fear too. Empty words would not do; any unsubstantiated assertion was an anathema. His academic deontology was without match. One of his students recalled having read in horror a recent working paper with some similar findings to one of his own. He promptly asked Keith whether he should have to cite the said working paper, given he already had written his own working paper prior to reading it. Keith just looked sternly, and the working paper was added to the references of the next draft. The same student was later to be criticised by a leading scholar for citing everyone he had ever read about the topic. It was Keith's academic morality and glare that ensured zero diversion ever since from what some might view as bad practice today i.e., citing work not published in a perceived to be top journal.

Keith's work remains highly regarded in the mainstream industrial organisation (IO) field. Through this work, he gradually became critical of modern capitalism, its monopolistic tendencies, and its impact on macroeconomic performance that was captured in *Monopoly Capitalism*. We delve into some of these themes below.

*The theoretical specification of structure-conduct-performance (SCP) relationships*

Before the advent of IO, industrial economics was essentially an empirical field. The SCP paradigm held that the industry's structure, in particular the degree of industry concentration was the key determinant of firm conduct and industry performance (notably profitability). The policy implication was that a high degree of monopoly (in an industry) would engender higher prices, lower outputs and a misallocation of resources. This would invite and should be dealt with by anti-trust policies/regulations. The main conceptual framework at this time was Modigliani's (1958) limit pricing model, where under the 'Sylos postulate' (where incumbents and potential entrants share similar expectations of incumbent behaviour), predicted prices equilibria would be established above perfectly competitive prices but below monopoly ones, the gap depending on barriers to entry. Several studies had tested this relationship (see Scherer, 1970), although the evidence was mixed.

The seminal work of Cowling and his then Ph.D. student Michael Waterson provided the first mathematical specification of the full SCP relationship. Cowling and Waterson (1976) began by assuming a profit-maximising firm and demonstrated how the industry price-cost margin was related negatively to income elasticity of demand and positively to the degree of collusion and the Herfindahl index of concentration. The equation helped provide a mathematical derivation and confirmation of the Structure-Conduct-Performance model, albeit not a causal link.

Baumol's (1982) subsequent contestable markets model in which barriers to entry were unimportant and perfectly competitive prices re-established, might then be regarded as a variation of the Cowling-Waterson 'generalised oligopoly' model (Pitelis, 1990). In this regard and somewhat ironically (given his later critical stance), Cowling was a co-founder of the emerging field of IO, with its emphasis on rational choice modelling and mathematical rigour. The empirical aspect of Cowling and Waterson (1976) shed light on extant SCP empirical studies, which suffered from omitted variable bias (regarding for instance, the industry price elasticity of demand). Cowling and Waterson adjusted for this problem in a way that predated the subsequently popular first-differences approach. Cowling and Waterson (*ibid.*) established the Herfindahl index as the theoretically relevant index of concentration, which subsequently informed other scholarly and policy work (e.g., Dansby and Willig, 1979; Farrell and Shapiro, 1990). Together with Stigler's Stigler (1964) theory of oligopoly, it served as a forerunner for the use of the Herfindahl index in the landmark US Horizontal Merger guidelines first published in 1982 and which have been subsequently revised several times (Waterson, 2003). Later Cowling and Sugden (1989) expanded the original relationship to include the role of transnational firms.

In IO, it had become accepted that credible commitments in the degree of excess capacity could help incumbent firms maintain monopoly profits, even when facing the threat of potential entry. Following Smiley (1988), excess capacity was identified in terms of physical production, advertising, R&D, and brand proliferation. Cowling argued that investments in excess capacity could incentivise incumbents facing potential entry to bolster the degree of collusion. This provided a positive link between the threat of entry and the degree of monopoly. This outcome turned conventional wisdom on its head and has informed his subsequent radical work (Cowling, 1982, 1983).

The mid to late 1970s were a fruitful time for Cowling's research. Cowling and Mueller (1978) is another pioneering paper and has been described as one of '*the two seminal articles on measuring economy-wide losses from market power*' (Church and Ware, 2000, p. 43). This paper argued that existing studies underestimated the true size of monopoly welfare losses in the economy. They questioned Harberger's (1954) assumption of an industry price elasticity of demand equal to minus one which implied pricing at zero marginal costs. With linear demand and marginal revenue curves, monopolists would produce half of the competitive output and allocative inefficiency would be equal to half of observed monopoly profits. Concerns with other assumptions and estimates in Harberger's (1954) analysis were also addressed, and after accounting for rent-seeking and 'wasteful' advertising expenditure, Cowling and Mueller estimated monopoly welfare losses of approximately 7 and 13% of 'Gross Corporate product' for the UK and the USA (well above Harberger's original estimates of between 0.1 and 1% of US GNP).

Advertising was a special long-term interest for Cowling. In a UK government-commissioned study in 1975, he led a Warwick team exploring the relationship between advertising, industrial concentration and profitability across several industries (Cowling *et al.*, 1975). These included the car market, coffee and cigarettes which had broader implications for competition and health policy (see also Cowling and Cubbin, 1971; Cowling *et al.*, 1975). In 1983, he published, with John Brack, a paper exploring the impact of advertising intensity upon work-leisure choices. Cowling regarded this as his favourite academic paper. Neoclassical economics predicted that rises in real wages would lead workers to substitute working hours for more leisure time. That assumed that the income effect (from higher real wages) dominated the substitution effect. While that appeared to hold during the 19th century, the pattern reversed in the twentieth century, when total working hours in the USA was increasing. Using US data, Brack and Cowling (1983) argued this was related to advertising intensity, which fuelled consumer demand and required longer working hours to pay for it (see also Cowling, 2006; Cowling *et al.*, 2011). This focus on advertising has proven prophetic, sometimes in ways that Keith himself could not have anticipated (Pitelis, 2022).

*Monopoly Capitalism*

In their own way, the aforementioned works provided the conceptual and empirical foundations for Monopoly Capitalism (1982). During the early 1970s, Cowling had read Baran and Sweezy's (1966) *Monopoly Capital*, a book that he later regarded as altering his perspective and thinking away from specifically IO issues to their macroeconomic implications. His starting point was that a rise in industrial concentration impacted prices, distribution and demand—a link first drawn in a *European Economic Review* article (Cowling, 1976). This involved a direct aggregation from the Cowling and Waterson identity where the left-hand side scaled up to the economy-wide share of profits. If the degree of monopoly rises across sectors, then at the macro-level, this would lead to a decline in the relative income shares of labour and an increase in the (potential) aggregate profit share. However, deficient aggregate demand might ensure potential profits are not actually realised (a 'realisation crisis'), and chronic stagnation sets in. This downward spiral would be aggravated further by a decline in saving resulting from increases in compulsory savings through the control by corporations and institutional investors of corporate retentions and pension fund surpluses (Pitelis, 1987).

Cowling wrote the first draft of *Monopoly Capitalism* while on sabbatical at Cambridge, during the UK's so-called 'Winter of Discontent' in 1978/79. The dire scenario outlined in the book depicted the stagnant state of Western economies amid the industrial strife of the 1970s and early 1980s.

In subsequent work, Cowling and Sugden (1987, 1994) extended the monopoly capitalism approach to the global economy, arguing the footloose activities of large transnational corporations could exacerbate stagnation tendencies by relocating or threatening to relocate production to offshore sites (see also Hymer, 1970, 1972). Through engaging in 'divide and rule' strategies with labour and governments, *trans*-nationals can reduce their wage costs and labour income shares, again dampening aggregate demand. Moreover, global offshoring can contribute to deindustrialisation and the undermining of local development initiatives.

Cowling and Sugden's work on transnational firms led to a critical reappraisal of the Coasian theory of the firm. The Coasian view saw firms as internal hierarchies co-ordinating production to economise on transaction and production costs, with their boundaries determined at the point where a further internal transaction would cease to reduce market transaction costs. At that point market exchange was efficient (Coase, 1937; Williamson, 1975). The transaction-cost argument gradually replaced the more critical view of Stephen Hymer, whose early study of large firms' motivations for foreign investment (Hymer 1960/1976) had explicated multinational firms in terms of monopoly and market power, which in turn contributed to uneven and dependent development (Hymer and Rowthorn, 1970; Hymer, 1972; Pitelis, 2022). Cowling and Sugden (1998a) drew upon Pitelis and Sugden's (1986) focus on control, as opposed to ownership, to define the firm as 'the means of co-ordinating production from one centre of strategic decision-making' (*ibid.*, p.67) and argued that the boundaries of the firm were determined by the locus and reach of their strategic decision-making. Unlike the Coasian view, which had been popularised by Williamson (1975, 1985) and the Transaction Costs Economics approach, the much broader Cowling and Sugden definition included activities by some subcontractors, often subservient to the strategic decisions of the larger corporate firms. For Cowling and Sugden (1998b), this definition placed strategy at the core of understanding the nature of the modern corporation, and in doing so captured the real essence of Coase's (1937) seminal article—that firms were '*islands of planning*'. Cowling and Sugden subsequently argued that strategic decisions taken in corporate boardrooms by elites typically had little regard for broader public interests, raising the spectre of 'strategic failure' (Branston *et al.*, 2006). Over the years, Cowling and others highlighted several such instances of 'strategic failure' in sectors such as energy and banking, and its contribution to the 'hollowing out' of Japanese industry (Cowling and Tomlinson, 2000, 2002; Branston *et al.*, 2016).

IO economists have long been concerned about market power and its abuse and have employed anti-trust and other regulatory measures to curb it and foster competition. Heterodox economists have also recognised the broader socio-political problems associated with imperfect competition and capital accumulation (see Robinson, 1933, 1956) and their impact on income distribution (Kalecki, 1971). Today these issues are once again at the fore of debate. Recent concerns about globalisation and the growth in corporate power suggest this analysis has been quite prescient (see also Cowling and Tomlinson, 2005; Zingales, 2017).

### *Anti-trust, Industrial and Trade Policy*

Cowling had a long-standing interest in anti-trust and regulation dating from his work on mergers and acquisitions (Cowling *et al.*, 1979). This highlighted the issue of public policy, especially anti-trust and industrial policy, and later a link to trade policy. He was particularly interested in looking for ways forward, especially for more inclusive, democratic and equitable social and economic structures. In this regard, he emphasised the importance of economic governance processes, which he regarded as critical in delivering more outcomes in the public interest. Given the deindustrialisation of the UK's manufacturing base in the 1980s and 1990s, Cowling became a strong advocate of anti-trust, industrial and regional policy and keen to explore alternative possibilities for industrial development. In Cowling and Sugden (1998b), the authors revisited the free versus strategic debate issue—they stated that in the context of transnational firms, 'free trade' could itself be seen as a form of 'strategic trade'.

During the 1980s and 1990s, Keith became interested in the work of Piore and Sabel (1984), who argued for the potential of so-called 'non-hierarchical' and more cooperative modes of production. These modes were found in traditional industrial districts of independent small and medium-sized enterprises (SMEs) such as in the Emilia Romagna region of Northern Italy (see Brusco, 1982). By developing this idea, Cowling and Sugden (1999) advocated nurturing and developing multinational webs of small and medium-sized firms to facilitate (international) cooperation in production activities. Interestingly, these types of networks are now promoted in European Union policy initiatives such as INTERREG and COST Actions (Barzotto *et al.*, 2020). Cowling remained interested in international industrial policy experiences, their efficacy and the different contexts in which it had been employed (Cowling and Tomlinson, 2011).

In contrast to Hymer and the state monopoly capitalism school (Pitelis, 1991), Cowling maintained a faith in the role of capitalist state and public policy. Arguably this underemphasised concerns with regulatory capture, state monopoly capitalism and 'imperialism', that at the time were topical among the Left (Pitelis, 1987, 1991). Upon absorbing *Monopoly Capitalism* overnight, one of his Ph.D. students provided Cowling with a 30-page long commentary, the last section of which was entitled '*The missing revolution?*', based on the idea that the proposed radical change by Cowling required an independent capitalist state. Theories of the state of both the structural and instrumental variety at that time, and since the communist manifesto, were sceptical about the state's neutrality, ability or interest to implement such changes. Recent developments seem to support the idea that state neutrality vis-à-vis classes is unlikely, and that state and big business interests tend to be more aligned than one would hope for, with potentially pernicious effects within and across nations (Gordon, 2015; Pitelis, 2017; Zingales, 2017). If more proof of that were ever required, the recent September 2022 inverse (and now largely reversed) Robin Hood pro capital 'mini budget' of the UK Conservative government, helped provide it, generously.

## Overview of papers in this Special Issue (SI)

The Special Issue consists of twelve papers. The first four deal with general monopoly capitalism related issues, the next four with specific companies or issues and the last four on wider implications and public policy.

The first paper in this SI, by Malcolm Sawyer (2022) sets the scene by providing an overview of recent developments in monopoly capitalism. In particular, the paper demonstrates how the monopoly capitalism lens can explain major developments in modern capitalist economies. This includes, for example, the tendency of modern capitalism to stagnation and low economic growth, which is now a live policy issue and yet appears to puzzle mainstream economists. In contrast, by emphasising the oligopolistic and monopolistic nature of the private sector, the monopoly capitalism approach—even in the age of new technologies—can offer plausible explanations. Policy solutions though are more elusive—though, there is a case for better regulation, and a more inclusive industrial policy (see Bianchi and Labory, 2022).

The next paper by Pitelis (2022) employs the works of Keith Cowling and Stephen Hymer as case examples of good, potentially prediction-aiding theory, to explore the relationship between theory and prediction in political economy and organisational economics. The author assesses critically the contribution of the two scholars and then cross fertilises it. He then seeks to develop their insights by leveraging key ideas from classical economics, notably Karl Marx on the private appropriation of social capital, and by Rudoph Hilferding on the emergence of financial capital that have more recently led to debates about financialisation, and the fusion between financial and industrial capital into Finance Capital. The author then applies the result to the platform-enabled, market-assisted organisational economy. Based on that, the paper argues that the emergence and rise of platform-enabled Big Tech, unicorns and the 'sharing economy' are both aligned with and partly predictable. The paper then discusses reasons why scholars are reluctant to risk making macro-level predictions, goes on to hazard some further predictions about the future of the corporation and capitalism and to discuss future research opportunities.

The paper by Vasudevan (2022) explores the potentially pernicious socio-economic implications of the concentration of capital in the hands of a few Big Tech behemoths. It claims that technology has helped the creation of globally integrated markets and the rise of digital platforms. The economies of scale and scope, and network externalities inherent in such platforms have helped engender structures akin to natural monopolies. These have been harnessed through artificial monopoly derived from the ownership of intangible capital and the data generated by the network of activities mediated through platforms. These allowed digital platforms to acquire large rents and structural power. With their widening global reach, digital platforms have created the modern equivalent of a serf, appropriating and monetising the digital footprint of the daily lives of people drawn and locked into these platforms. These developments underscore the contemporary relevance of the classical-Marxian characterisation of capitalist monopoly, and that of Baran, Sweezy and Cowling regarding corporate power, increasing inequality, declining labour shares and flagging investment. The paper claims that framing monopoly capital in a reconstructed classical-Marxian way, provides a useful basis for requisite policies to address the structural roots of digital monopoly, for instance the concentration of ownership of critical digital infrastructure and data. Strengthening anti-trust interventions, enforcing equal access rules, structural separations, and inter-operability standards, can help limit the capture of monopoly rents from digital platforms.

China has some important big digital companies which are often neglected in anglophone discussions of the digital economy. This gap is however addressed by Li and Qi (2022), who analyse the role of the Chinese big platform companies (such as Tencent and Alibaba) in the monopoly capitalism tradition. Their paper concentrates on power and financialisation and their consequences. The authors argue a power hierarchy has developed in the platform-economy, with Big Tech and big finance at the top, small platforms in the middle, and producers, customers and other stakeholders at the bottom. In doing so, the paper considers four dimensions of platform power: coercion, manipulation, domination and subjectification. The latter is related to "surveillance capitalism". In considering financialisation and monopolisation, the paper discusses the pioneering work of Hilferding, before arguing that monopolisation has led to a close, although not always stable, alliance between Big Tech and big finance. This has weakened the power of labour and contributed to increasing inequality and excess capacity. Li and Qi suggest these new platform structures have macroeconomic consequences such as rising inequality, overcapacity and financial instability. In advocating policy solutions, Li and Qi call for a better system of regulation, and the dismantling of the platform-economy hierarchy to allow more stakeholders to participate in the development process.

Early visionaries of the internet-based economy anticipated it would revive innovation and entrepreneurship by lowering entry barriers, promoting supply-chain reconfiguration, and helping inventors of new processes or products to connect directly with financiers, production sites and customers. The belief that monopoly would be less of a constraint on innovation with the transition from 'industrial' to 'digital' capitalism appears to be challenged by the rise of the large global platforms, with dominant market shares protected by scale and network-economies. But a revival of entrepreneurialism might still be expected if platforms enhance small innovators' trading opportunities and are kept under competitive pressure by the threat of customers switching. Catalano (2022) empirically assesses the long-term trends in entrepreneurship under the two phases of capitalism, using data on patent filings that distinguishes those of individuals from corporations, and focusing on France as an early (1980s) adopter of public information networks. While overall patent applications are lower (and more concentrated) in the 'digital' 1981–2019 period than the earlier 1950–80 'industrial' phase, there is a significant rise in applications by independent inventors, peaking at times of network expansion. But the boost is mainly to innovation in other production industries, with the rise of Big Tech restraining new entry to the digital sector itself.

The paper by Coveri *et al.* (2022) also applies the monopoly capitalism lens to the digital platform-economy, focusing on the case of Amazon. The paper starts with the ideas of Hymer, Zeitlin and others that that led Cowling and Sugden to define the large monopolistic firm as a means of planning production from a single strategic decision-making centre. Based on that, the paper attempts to develop a framework where digital platforms are conceived as an evolution of large transnational corporations. In their view, power and control are understood as levers for co-ordinating global production and influencing world economies and societies. By applying this framework to the Amazon case, the paper highlights that Amazon exercises control through several ways. These include diversification, control of data and technology, labour fragmentation and unequal bargaining power vis-à-vis governments. The authors suggest their framework helps to corroborate ideas developed by Hymer and Cowling.

The next paper by Conyon (2022) discusses the impact of Big Tech on personal privacy. Large numbers of users of digital platforms (e.g., Google, Facebook and Amazon) provide their personal data to these platforms, which then sell it on to advertisers. This is good business for both the platforms and the advertisers. The platforms earn large revenues and profits from this practice, while the advertisers can ensure their advertising is more targeted and tailored to specific audiences, enhancing the efficiency of their marketing efforts. Conyon draws attention to the negative side of these processes. As he notes (p. 1375): '*the emerging empirical evidence is sceptical about whether this process promotes well-being and happiness*.' Furthermore, a flood of individualised advertising violates what Supreme Court Justice Brandeis (in Warren and Brandeis, 1890) referred to as '*the right to be left alone*'. Do consumers worry about their privacy being violated? They tend to say so, but nevertheless provide lots of personal information to digital platforms ('the privacy paradox'). Taking account of the findings of behavioural economics and psychology, Conyon argues that the safeguarding of privacy requires regulation. In this regard, Conyon points to the EU's General Data Protection Regulation (GDPR) and the UK's Digital Market Unit (DMU) as steps in the right direction.

The issue of the malleability of consumer (and worker) preferences to corporate advertising in the digital age is taken up by Bailey *et al.* (2022). Following writers in the monopoly capital tradition, the authors argue that the rise in digital advertising and the use of platform technologies, driven by the new corporate giants (such as the FAANG or GAFAM) poses new questions for theory and public policy. Revisiting the earlier work of Kaldor (1950–51) and combining it with insights from the monopoly capitalism literature, Bailey *et al.* (2022) critically examine advertising as a subsidy that has facilitated the use of platform technologies, and the impact of digital technologies on the locational context (i.e., online or on the high street) in which advertising is consumed. As Bailey *et al.* (2022) argue, digitalisation has transformed traditional, mundane forms of advertising, and has—through data and complex algorithms—fuelled direct product purchases from the Big Tech companies. While others, notably Zuboff (2015, 2019) have argued this represents a new era of surveillance capitalism, Bailey *et al.* (2022) suggest these new developments are very much in line with the earlier arguments of Kaldor and the monopoly capital school. The paper then explores the public policy implications for the regulation of advertising and platform technologies in the digital age.

The extent to which consumer gains from highly concentrated Big Tech platforms arise at the expense of casualised labour is investigated by Henley (2022), studying the impact of a shift in employment towards digitally enabled services such as Deliveroo and Uber. The precarious payment and treatment of 'gig' employees is analysed as part of a wider move towards hyper-flexibility as platform technologies erode workers' bargaining power, even in conditions ostensibly close to full employment. As well as detaching real wages from labour productivity and magnifying wage dispersion, this is shown to contribute to a fall in the wage-share of national income, with potentially adverse macroeconomic consequences due to lower innovation incentives and constraints on aggregate demand. Detailed analysis of UK data highlights the significant expansion of self-employed 'freelancers' and 'sub-contractors' within the working population, and the tendency of gig-economy pay to fall in nominal as well as real terms in the decade to 2019.

Digital platforms place conflicting pressures on public policy, which must recognise their potential to drive distributional efficiency and new forms of industrial development while guarding against the misuse of monopoly and monopsony power. Seeking a clearer guide for policy, Andreoni and Roberts (2022) develop the distinction between Schumpeterian *innovation* rents that may reward and incentivise productive investment, and the *monopoly rents* that are highlighted in Cowling's and Hymer's work. Through a detailed analysis of how the major global platforms acquire their dynamic capability—especially through the accumulation and application of data—and enhance profitability by shaping their own markets, the authors examine the types of regulation and competition policy needed to prevent value-creation breaking down due to monopoly value-extraction, and to overcome uneven geographical development under platforms' coordination. Their case-study of South Africa explores the challenge to middle-income countries in promoting local enterprise generation and income growth through engagement in the global value chains of which digital platforms are now the main integrators.

Armoogum *et al.* (2022) examine the way that conflicting pressures on industrial policy and regulation have played out in practice, constructing and analysing an international database of regulatory interventions reported in 2006–2018. This enables a test of Cowling's argument that the global expansion of monopoly—as achieved by the biggest digital platforms—would lead to oligopolistic markets in which collusion became the main public policy concern. Presenting results that show anti-cartel actions increasing in the first half of the period but decreasing in the second, the authors conclude that monopolistic behaviour has returned to being the main policy concern, in the US and elsewhere, due to the dominant positions of a handful of competitively differentiated global platforms, and the usual need for regulatory action to be taken at national level, where the problem will appear as one of national monopoly.

The ability of the largest platforms to defy such regulation, continuing to expand their shares of global revenue and profit, is the starting point for Bianchi and Labory's (2022) exploration of future industrial strategies. Reviewing the powerful forces that enable established platforms to keep extending their global reach and value-capture, this contribution underscores the need for Cowling's two-pronged approach to industrial regulation, restraining the growth of monopoly via smaller-enterprise development as well as improving monopoly governance through greater stakeholder involvement. Data use emerges as a key focus of regulation, in a world where 'free' provision of consumer services (underpinned by marketing data) limits the relevance of price regulation. Reviewing contemporary policies, the paper shows how the EU's attempts to deter monopolies' growth and limit their exploitation of customer data (under the Digital Markets Act) contrasts with China's promotion of state-aligned platforms as a counterweight to privately-run or foreign alternatives.

## Epilogue

Keith became occasionally frustrated that mainstream economics journals were no longer open to hosting challenging ideas, while his heterodox counterparts sometimes labelled his approach as 'Neoclassical Marxism'. Yet, over time, his ideas and interests became the staple of modern discourse, mainstream and post-classical (Pitelis, 2016).

In IO, Cowling's early work continues to hold significant influence among scholars (e.g., Fabra, 2006). More broadly, unchecked corporate power in its link to political power (Zingales, 2017), worsening income distribution (Piketty, 2014), manipulative advertising and fake news, economic stagnation (Gordon, 2015) and the never-ending economic crises, are now the order of the day. These phenomena underpin the current disillusionment with modern (monopoly) capitalism which threaten Western democracy, and global stability (Pitelis, 2017).

While radical in his outlook, Keith often advocated a consensual approach to tackling economic and political debate. Advising one Ph.D. student to tone down his (Marxist) language in a (subsequently successful) Economic and Social Science (ESRC) scholarship proposal, he remarked *'Painting oneself into a corner often achieves very little. It is what the Left has always tended to do and is actually rather conservative!* [because it maintains the status quo]'. Instead, he advised, '*It is better to adopt a tone and approach that positively engages with mainstream economists (and politicians), so that eventually they take your ideas on board (and then claim them as their own!)*'. For him, that was the ultimate victory. In this regard, Cowling would not fail to see the irony that while some of his ideas were seen by some as rather radical, they are now at the forefront of scholarly and policy discourse. Industrial strategy, strategic trade policies and concerns about monopoly profits (most recently in energy markets) are now in vogue. Meanwhile, in the UK, recent Conservative governments have begun to fête state intervention in the form of industrial strategy and to 'level up' UK regions. The EU Commissioner for Competition, Margrethe Vestager has acquired a legendary status for her battles against perceived power abuse, and the related issue of tax avoidance by today's Big Tech monopolists.

In conclusion, and as the papers in the SI highlight, Keith's concerns and ideas have helped anticipate many a recent development and were prescient and on balance, correct. That many would later re-invent his ideas forgetting sometimes to search for and acknowledge their Cowling-ian heritage, would not deter Keith from considering this as the ultimate compliment.

## Bibliography


Andreoni, A. and Roberts S. 2022. Governing digital platform power for industrial development: towards an entrepreneurial-regulatory state, *Cambridge Journal of Economics*, vol. 46, no. 6, 1431–54. doi:10.1093/cje/beac055

Armoogum, P., Davies S. and Mariuzzo F. 2022. The changing face of anti-trust in the world of Big Tech: collusion versus monopolisation, *Cambridge Journal of Economics*, vol. 36, no. 6, 1455–79. doi:10.1093/cje/beac046

Bailey, D., Cowling, K., and Tomlinson, P. R. 2015. *New Perspectives on Industrial Policy for a Modern Britain*. Oxford, Oxford University Press

Bailey, D., Coffey D., Thornley C and Tomlinson P. R. 2022. Advertising and the consumer in the age of Big Tech: a new moment in the evolution of monopoly capitalism, *Cambridge Journal of Economics*, vol. 46, no. 6, 1387–406. doi:10.1093/cje/beac050

Baran, P.A. and Sweezy, P.M. 1966. *Monopoly Capital*, Harmondsworth, Penguin

Barzotto, M., Corradini C., Fai F., Labory S. and Tomlinson P. R. 2020. Smart Specialisation, Industry 4.0 and lagging regions: some directions for policy, *Regional Studies, Regional Science*, vol. 7, no. 1, 318–32. doi:10.1080/21681376.2020.1803124

Baumol, W. J. 1982. Contestable markets: an uprising in the theory of industry structure, *The American Economic Review*, vol. 72, no. 1, 1–15

Bianchi, P. and Labory S. 2022. Industrial strategy in a transforming capitalism, *Cambridge Journal of Economics*, vol. 46, no. 6, 1481–97. doi:10.1093/cje/beac049

Brack, J., and Cowling. K. Cowling, 1983. Advertising and labour supply: Workweek and work year in US manufacturing industries, 1919–76, *Kyklos*, vol. 36, 285–303

Branston, J. R., Cowling K. and Sugden R. 2006. Corporate governance and the public interest, *International Review of Applied Economics*, vol. 20, no. 2, 189–212

Branston, J. R., Cowling K. G. and Tomlinson P. R. 2014. Profiteering and the degree of monopoly in the Great Recession: recent evidence from the United States and the United Kingdom, *Journal of Post Keynesian Economics*, vol. 37, no. 1, 135–62

Branston, J. R., Cowling, K. G., and Tomlinson, P. R. 2016. Addressing 'strategic failure': widening the public interest in the UK financial and energy sectors, pp. 198–222 in Begley, J., Coffey, D., Donnelly, T., and Thornley, C. (eds.), *Global Economic Crisis and Local Economic Development*, London, Routledge

Brusco, S. 1982. The Emilian model: productive decentralisation and social integration, *Cambridge Journal of Economics*, vol. 6, no. 2, 167–84

Catalano, D. 2022. Entrepreneurship and digital capitalism: an assessment of corporate power, *Cambridge Journal of Economics*, vol. 46, no. 6, 1315–39. doi.10.1093/cje/beac053

Chang, H.-J. 1993. *The Political Economy of Industrial Policy*, London, Springer

Church, J and Ware, R 2000 *Industrial Organisation: A Strategic Approach*, Boston, MA, Irwin McGraw-Hill

Coase, R. 1937. The nature of the firm, *Economica*, vol. 4, no. 16, 386–405

Congdon, T. 2006. The 364 Economists and the 1981 Budget: an examination of the empirical evidence, *Economic Affairs*, vol. 26, no. 4, 34–8. doi:10.1111/j.1468-0270.2006.00666.x

Conyon, M. 2022. Big Technology and data privacy, *Cambridge Journal of Economics*, vol. 46, no. 6, 1369–85. doi:10.1093/cje/beac052

Coveri, A., Cozza C. and Guarascio D. 2022. Monopoly Capital in the time of digital platforms: a radical approach to the Amazon case, *Cambridge Journal of Economics*, vol. 46, no. 6, 1341–67. doi:10.1093/cje/beac044

Cowling, K. 1976. On the theoretical specification of industrial structure–performance relationships, *European Economic Review*, vol. 8, no. 1, 1–14

Cowling, K. 1982 *Monopoly Capitalism*, London, The MacMillan Press

Cowling, K. 1983. Excess capacity and the degree of collusion: oligopoly behaviour in the slump, *The Manchester School*, vol. 51, no. 4, 341–59

Cowling, K. G. 2006. Prosperity, depression and modern capitalism, *Kyklos*, vol. 59, no. 3, 369–81

Cowling, K. and Cubbin J. 1971. Price, quality and advertising competition: an econometric investigation of the United Kingdom car market, *Economica*, vol. 38, no. 152, 378–94. doi:10.2307/2551879

Cowling, K. and Mueller D. 1978. The social costs of monopoly power, *Economic Journal*, vol. 88, no. 352, 727–48

Cowling, K., Cable, J., Kelly, M. and T. McGuinness. 1975. *Advertising and Economic Behavior*, London, The Macmillan Press, Ltd

Cowling, K, Stoneman, P, Cubbin, J, Cable, J, Hall, G, Domberger, S and Dutton, P. 1979. *Mergers and Economic Performance*, Cambridge, Cambridge University Press

Cowling K, Geroski P, Gould B, Knight B, Minns R, Neuburger, H, Rogers, M, Sawyer, M, Stanley, N, Totterdill, P, Sugden, R and Waterson, M. 1989. *Beyond the Review: Perspectives on Labour's Economic and Industrial Strategy*, London, United Kingdom, Industrial Strategy Group

Cowling, K, Poolsombat, R and Tomlinson, P.R. 2011 Advertising and labour supply: Why do Americans work such long hours?, *International Review of Applied Economics*, vol. 25, no.3, 283–301

Cowling, K and Sugden, R. 1987. *Transnational Monopoly Capitalism*, Brighton, Wheatsheaf

Cowling, K. and Sugden R. 1989. Exchange rate adjustment and oligopoly pricing behaviour, *Cambridge Journal of Economics*, vol. 13, no. 3, 373–93

Cowling, K and Sugden R. 1992. *Current Issues in Industrial Economic Strategy*, Manchester, United Kingdom, Manchester University Press

Cowling, K and Sugden, R. 1994 *Beyond Capitalism, Towards a New World Order*, London, Pinter

Cowling, K. and Sugden R. 1998a. The essence of the modern corporation: markets, strategic decision-making and the theory of the firm, *The Manchester School*, vol. 66, no. 1, 59–86

Cowling, K. and Sugden R. 1998b. Strategic trade policy reconsidered: National Rivalry vs Free Trade vs International Co-operation, *Kyklos*, vol. 51, no. 3, 339–58

Cowling, K. and Sugden R. 1999. The wealth of localities, regions and nations: developing multinational economies, *New Political Economy*, vol. 4, no. 3, 361–78

Cowling, K. and Tomlinson P. R. 2000. The Japanese Crisis: a case of strategic failure?', *The Economic Journal*, vol. 110, no. 464, F358–81

Cowling, K. and Tomlinson P. R. 2002. Revisiting the roots of Japan's economic stagnation: the role of the Japanese corporation, *International Review of Applied Economics*, vol. 16, no. 4, 373–90

Cowling, K. and Tomlinson P. R. 2005. Globalisation and corporate power, *Contributions to Political Economy*, vol. 24, no. 1, 33–54

Cowling, K. and Tomlinson P. R. 2011. Post the Washington Consensus: Economic Governance and Industrial Strategies for the 21st century, *Cambridge Journal of Economics*, vol. 35, no. 5, 831–52

Cowling, K. and Waterson M. 1976. Price-cost margins and market structure, *Economica*, vol. 43, no. 171, 267–74. doi:10.2307/2553125

Dansby, R. and Willig R. 1979. Industry performance gradient indexes, *American Economic Review*, vol. 69, no. 3, 249–60. http://www.jstor.org/stable/1807361

Fabra, N. 2006. Collusion with capacity constraints over the business cycle, *International Journal of Industrial Organisation*, vol. 24, no. 1, 69–81

Farrell, J. and Shapiro C. 1990. Horizontal mergers: an equilibrium analysis, *American Economic Review*, vol. 80, no. 1, 107–26. http://www.jstor.org/stable/2006737

Fine, B. and Murfin A. 1984. The political economy of monopoly and competition: a critique of monopoly and stagnation theory, *International Journal of Industrial Organization*, vol. 2, no. 2, 133–46

Foroohar, R. 2019. *Don't be Evil: How Big Tech Betrayed Its Founding Principles—and All of Us*, New York City, Broadway Business

Gordon, R. J. 2015. Secular stagnation: a supply-side view, *American Economic Review*, vol. 105, no. 5, 54–9

Graham, A. 2001. The Assessment: Economics of the Internet, *Oxford Review of Economic Policy*, vol. 17, no. 2, 145–58

Harberger, A. C. 1954. Monopoly and resource allocation, *American Economic Review*, vol. 4, no. 2, 77–87

Henley, A. 2022. Digital technologies, gig work and labour share, *Cambridge Journal of Economics*, vol. 46, no. 6, 1407–29. doi:10.1093/cje/beac043

Hilferding, R. 1910. Finance capital: a study in the latest phase of capitalist development in Watnick, M., and Gordon, S. (eds.), RKP, London (1981)

Hymer, S. H. 1960/1976. *The International Operations of National Firms: A Study of Direct Foreign Investment*. PhD Dissertation. Published posthumously. The MIT Press, 1976. Cambridge, Mass

Hymer, S. H. 1970. The efficiency (contradictions) of multinational corporations, *The American Economic Review*, vol. 60, no. 2, 441–8

Hymer, S. H. 1972. The multinational corporation and the law of uneven development in Bhagwati, J. N. (ed.), *Economics and World Order*, London, Macmillan

Hymer, S.H. and Rowthorn, R 1970 Multinational Corporations and International Oligopoly: The Non-American Challenge' in Kindleberger, C.P. (ed), *The International Corporation*, Cambridge, MA, MIT Press

Kaldor, N. 1950 -1951) The economic aspects of advertising, *The Review of Economic Studies*, vol. 18, no. 1, 1–27

Kalecki, M. 1971. *Selected Essays On The Dynamics of The Capitalist Economy 1933–1970*, Cambridge, Cambridge University Press

Khan, L. M. 2017. Amazon's antitrust paradox, *Yale Law Journal*, vol. 126, no. 3, 564–907

Lenin, V.I. 1917. Imperialism, the highest stage of capitalism, pp. 177–270 in Christman, H.M. (1987, ed.), *Essential Works of Lenin*, New York, Dover

Li, Z. and Qi H. 2022. Platform power: monopolisation and financialisation in the era of Big Tech, *Cambridge Journal of Economics*, vol. 46, no. 6, 1289–314. doi:10.1093/cje/beac054

Luxemburg, R. 1913/2015. *Die Akkumulation des Kapitals. Dresdner Volkszeitung [de] (in German)*. 24 (16): 1, English translation (2015) *The Accumulation of Capital*. London, Routledge

Marx, K. 1867/1959. *Das Kapital: Kritik der politischen Oekonomie. Vol. 1: Der Produktionsprozess des Kapitals* (1 ed.). Hamburg: Verlag von Otto Meissner. doi:10.3931/e-rara-25773, English translation (1959), Capital, London, Lawrence & Wishart

Modigliani, F. 1958. New developments on the oligopoly front, *Journal of Political Economy*, vol. 66, no. 3, 215–32

Nickell, S. 2006 The budget of 1981 was over the top, pp. 54–61, vol. 26, no. 4 in Booth, P. (ed.), *Were 364 Economists all Wrong?*, London, Institute of Economic Affairs

Petit, N. and Teece D. J. 2021. Innovating big tech firms and competition policy: favoring dynamic over static competition, *Industrial and Corporate Change*, vol. 30, no. 5, 1168–98

Piketty T. 2014 *Capital in the Twenty-First Century*, Cambridge, MA, Belknap Press

Piore, M and Sabel, C 1984 *The Second Industrial Divide: Possibilities for Prosperity*, New York, Basic Books

Piteli, E. E. and Pitelis, C. N. 2022. Platform oligopolies, antitrust policy and sustainable development, pp. Forthcoming in Bianchi, P., Labory, S., and Tomlinson, P. R. (eds.), *Handbook on Industrial Development*, Cheltenham, Edward Elgar Publishing, Forthcoming

Pitelis, C. N. 1987. *Corporate Capital, Control, Ownership, Saving, and Crisis*, Cambridge and New York, Cambridge University Press

Pitelis, C. N. 1990. Neoclassical models of industrial organization, pp. 63–72 in Dankbaar, B., Groenewegen, J., and Schenk, H. (eds.), *Perspectives in Industrial Organization*, Dordrecht, Springer

Pitelis, C. N. 1991 *Market and Non-market Hierarchies*, Oxford, Blackwells

Pitelis, C. N. 1994. Industrial strategy: For Britain, in Europe and the World, *Journal of Economic Studies*, vol. 21, no. 5, 3–92

Pitelis, C. N. 2016. Learning, innovation, increasing returns and resource creation: Luigi Pasinetti's original sin of, and call for a post-classical, economics, *Cambridge Journal of Economics*, vol. 41, no. 3, 679–91

Pitelis, C. N. 2017. Europe in question and the question of Europe-an (d) capitalism: a review of Stuart Holland's 'Europe in Question', *Cambridge Journal of Economics*, vol. 41, no. 6, 1721–39

Pitelis, C. N. 2022. Big tech and platform-enabled multinational corporate capital(ism): the socialisation of capital, and the private appropriation of social value, *Cambridge Journal of Economics*, vol. 46, no. 6, 1243–68. doi:10.1093/cje/beac042

Pitelis, C. N. and Sugden R. 1986. The separation of ownership and control in the theory of the firm: a reappraisal, *International Journal of Industrial Organisation*, vol. 4, no. 1, 69–86

Pitelis, C. N. and Tomlinson P. R. 2017. Industrial organisation, the degree of monopoly and macroeconomic performance—a perspective on the contribution of Keith Cowling (1936–2016), *International Journal of Industrial Organization*, vol. 55 (Nov), 182–9

Robinson, J. 1933. The theory of imperfect competition, *The Economic Journal*, vol. 43, no. 172, 657–61.

Robinson, J. 1956. *The Accumulation of Capital*, London, Springer

Sawyer, M. 2022. Monopoly Capitalism in the past four decades, *Cambridge Journal of Economics*, vol. 46, no. 6, 1225–41. doi:10.1093/cje/beac048

Scherer, F. M. 1970. *Industrial Market Structure and Market Performance*, Chicago, Houghton Mifflin

Shattock, M. 2003 Keith Cowling and Warwick: the contribution to the University, pp. 285–296 in Waterson, M (ed.) *Competition, Monopoly and Corporate Governance, Essays in Honour of Keith Cowling*, Cheltenham, Edward Elgar

Smiley, R. 1988. Empirical evidence on strategic entry deterrence, *International Journal of Industrial Organisation*, vol. 6, no. 2, 167–80

Steindl, J. 1952 *Maturity and stagnation in American capitalism*, Oxford, Blackwell

Stigler, G. J. 1964. A theory of Oligopoly, *Journal of Political Economy*, vol. 72, no. 1, 44–61

Vasudevan, R. 2022. Digital platforms: monopoly capital through a Classical-Marxian lens, *Cambridge Journal of Economics*, vol. 46, no. 6, 1269–88. doi:10.1093/cje/beac045

Warren, S. and Brandeis L. 1890. The Right to privacy, *Harvard Law Review*, vol. 4, no. 5, 193–220

Waterson, M. 2003 *Competition, Monopoly and Corporate Governance, Essays in Honour of Keith Cowling*, Cheltenham, Edward Elgar

Williamson, O.E. 1975 *Markets and Hierarchies: Analysis and Antitrust Implications*, New York, The Free Press

Williamson, O. E. 1985. *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, New York, The Free Press

Zingales, L. 2017. Towards a political theory of the firm, *Journal of Economic Perspectives*, vol. 31, no. 3, 113–30

Zuboff, S. 2015. Big other: surveillance capitalism and the prospects of an information civilisation, *Journal of Information Technology*, vol. 30, no. 1, 75–89

Zuboff, S. 2019 *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*, London, Profile Books