

Gerben Bakker

Soft power: the media industries in Britain since 1870

Book section (Accepted version)

Original citation:

Originally published in Floud, R.; Humphries, J. and Johnson, P., *The Cambridge Economic History of Modern Britain*, Cambridge, UK : Cambridge University Press, 2014, pp. 416-447.

© 2014 The Author

This version available at: <http://eprints.lse.ac.uk/65053/>

Available in LSE Research Online: January 2015

LSE has developed LSE Research Online so that users may access research output of the School. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LSE Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain. You may freely distribute the URL (<http://eprints.lse.ac.uk>) of the LSE Research Online website.

This document is the author's submitted version of the book section. There may be differences between this version and the published version. You are advised to consult the publisher's version if you wish to cite from it.



THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE ■

Economic History Working Papers

No: 200/2014

Soft Power: The Media Industries in Britain since 1870

Gerben Bakker
London School of Economics

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

DEPARTMENT OF ECONOMIC HISTORY

WORKING PAPERS

NO. 200 - MARCH 2014

Soft Power: The Media Industries in Britain since 1870

Gerben Bakker, London School of Economics

g.bakker@lse.ac.uk

An edited version will be forthcoming as: Gerben Bakker, 'Soft Power: The Media Industries in Britain since 1870' in Roderick Floud, Jane Humphries and Paul Johnson eds., *The Cambridge Economic History of Modern Britain* (Cambridge University Press, 4th ed., 2014).

Abstract

This paper discusses the emergence and growth of various media industries in Britain. It shows how a rise in real wages and leisure time, rapid urbanisation and the development of fast urban transport networks, and a rapid growth of the market's size led to a sharp rise in the demand for media and entertainment products and services, which was met by ever-new technologies coming from constantly emerging new industries, such as recorded music, film, radio, television, cable, videogames, internet, and social media. The paper argued these industries contributed to a sharp productivity rise by industrialising traditional media and entertainment, and to a sharp welfare growth as consumers valued them so highly that they were willing to incur ever-higher opportunity costs to consume them. It also discusses how four factors—quality races, marginal revenues equalling marginal profits, the superstar effect and agglomeration benefits—shaped the evolution of individual industries, and it assesses the success or failure of British industrial policy towards media industries. The paper observes media's impact on the aggregate economy through opportunity costs, expectations and aspirations, the functioning of the market, education, and, finally, through shaping the means of institutional change. In addition, the paper makes new decennial benchmark estimates for British consumer expenditure on books between 1870 and 1900, on recorded music between 1900 and 1930 and on cinema between 1910 and 1930, for which previously no estimates were available

JEL Codes: I31; L1, L5, L82, L86, L88; L96; N73, N74; O14; Z11.

Keywords: media industries—economic history, consumer expenditure, revealed comparative advantage, Britain, 1870-2010; industrialisation of services, sunk costs, quality races, toll goods, superstars, agglomeration benefits, media policy, 'happiness'; advertising, news agencies, books, publishing, theatre, recorded music, film industry, broadcasting, radio, television, videogame.

Acknowledgements: The author wishes to thank Stephen Broadberry, Sir Roderick Floud, Stephen Harp, Richard John, Paul Johnson, Tom Nicholas, Huub Wijffjes, the participants at the Workshop on the Cambridge Economic History of Modern Britain in Oxford and at the Business History Conference in Columbus, Ohio, for comments and suggestions. The research for this paper was partially funded by the Economic and Social Research Council (U.K.) and the Advanced Institute of Management Research under the ESRC/AIM Ghoshal Research Fellowship Scheme, grant number RES-331-25-3012. The author alone, of course, is responsible for the final text and any errors of fact or interpretation that may remain.

Soft power: the media industries in Britain since 1870

GERBEN BAKKER

Contents

Introduction

Industrialisation: the thief in the night

Industry structure: four economic tendencies

 Dominant firms

 Advertising

Creative destruction: emergence, growth and decline of British media industries

 The case of publishing

 The case of recorded music

 The case of broadcasting

The impact of media industries on the aggregate economy

 Time is money

 Expectations and aspirations

 Market functioning

 Education

 Shaping the means of institutional change

Policy towards media industries

 The case of the film industry

 Why direct intervention in film but not in recorded music?

Conclusion

Soft power: the media industries in Britain since 1870

GERBEN BAKKER

Brief contents

Introduction

Industrialisation: the thief in the night

Industry structure: four economic tendencies

Creative destruction: emergence, growth and decline of British media industries

The impact of media industries on the aggregate economy

Policy towards media industries

Conclusion

1. Introduction

The Olympic Games in London in the summer of 2012 stood at the end of a long twentieth century in which the British economy changed from a manufacturing stalwart into a major exporter of services. The opening and closing ceremonies stood in remarkable contrast. The former related a story in which the industrial revolution and the welfare state figured heavily, the latter focused exclusively on music, Britain's foremost cultural export. In public perception, then, the British comparative advantage had little to do anymore

with manufacturing. Instead, the ceremony closed a twentieth century in which Britain benefited from a distinctive capability in media and entertainment. In the public mind the music industry's importance was far larger than its limited GDP-share suggested.

Media can be seen as an infrastructure industry such as electricity or transport. Through information transmission, they helped markets exist and function; through the conditioning of morals and empathy they reduced transaction costs; through advertising they revolutionised the market structure of consumer goods industries; through educational materials they increased human capital; through the formation of expectations they increased citizens' aspirations; and, finally, they facilitated knowledge exchange and collective action that could kick-start institutional change, as has become evident so recently in the Arab spring. A contemporary economic historian might exclaim that media are everywhere except in the economic history literature, not unlike Briggs' (1960: 38-61) remark that "The provision of entertainment has never been a subject of great interest either to economists or economic historians—at least in their working hours".

This chapter examines three questions. First, we investigate how new media industries have arisen in Britain since 1870 and how we can conceptualise their emergence. Second, we explore what tendencies influenced the long-run evolution of each of these industries. Third, we assess the impact they had on the rest of the economy.

These questions are worthwhile because it is likely that Britain traditionally had a comparative advantage in entertainment production that it could never fully exploit internationally. After 1870, however, a series of

technological revolutions made media products increasingly tradeable and allowed Britain to capitalise on its comparative advantage. In the 140 years since then, few other industries have been turned upside down so often by new technologies. Yet almost all old media industries survived in new forms, unlike manufacturing industries such as textiles, coal-mining or steel. Media industries formed the capstone of the British economy, with an impact far larger than their GDP-share suggested.

This chapter develops a conceptual framework and analyses the dynamics of media industries, identifying long-run tendencies. It does not provide a descriptive history of all media industries in Britain since 1870, for which many other works can be consulted. Some industries, therefore, will be treated more equally than others.

We will first analyse the emergence of new media technologies in the framework of an industrialisation hypothesis, then descend to the within-industry level and identify four tendencies that affected the internal evolution of particular media industries. Subsequently we discuss the impact of the media industries on the rest of the economy, and finally we assess the role of policy.

Though the music at the end of the Games seemed far removed from the industrial revolution depicted at their start, British entertainment experienced an industrial revolution of its own from about 1890, which led to the industrialisation of entertainment. With this revolution, our journey begins.

2. Industrialisation: the thief in the night

Sixty special trains filled with actors, actresses, stage hands, carpenters, promoters, their entourage and accompanying props and scenery, sped over the railways across Britain on a normal Sunday evening in 1870, on their way to their next venue. Britain had a large number of theatres, and almost every month a new large music hall opened somewhere. Consumers could enjoy the more vulgar entertainment in cider cellars and penny gaffs, go to the horse races, buy one of the many daily editions of a newspaper from a street vendor, borrow a book from a library, or embark on an interactive game, for example a board game or a game of cards with friends in a pub.

Rising real wages, falling working hours, population growth and the rise in literacy and education increased demand for media and entertainment further, while increasing urbanisation and better urban transport networks transformed more of this demand in consumption by concentrating it spatially. This boosted the growth of the existing media industries further in the years between 1870 and 1900. Around 1900, theatre and music hall circuits had arisen in almost every part of the country, newspapers were all-around, and new printing methods spread them even further and added more drawings and photographs. Magazines became a new growth industry for a Britain that was becoming more literate by the day.

Initially the demand was transformed into consumption using traditional technologies, for example through music hall and theatre circuits and high-capacity venues with differentiated prices (Bakker 2012a). Ever more persons were needed to work in the media and entertainment industries. The case of spectator entertainment shows how this created bottlenecks that, by the end

of the nineteenth century, triggered a process of industrialisation, in which entertainment was automated, standardised and made tradeable (Bakker 2008). Before this period, producers and consumers needed to be at the same place and time, and there was always uncertainty about the timely arrival and fitness of cast and sets. Following the adoption of cinema, the performance was replaced by moving images, consumers were guaranteed a performance of standard quality, and actors could perform at infinitely many places at the same time. Similar industrialisations would follow with recorded music, radio, television, videogames and the internet. New technologies also improved the productivity of traditional media, such as the amplification of stadium-scaled concerts and the televising of live performances. Each of these industrialisations came as a thief in the night. They were hardly noticed by economists at the time or economic historians afterwards, and met little Luddite resistance of the kind that had happened during the industrialisations of the eighteenth and early nineteenth century.

A comparative estimate of productivity growth in spectator entertainment for Britain, France and the United States between 1900 and 1938 suggests that British live entertainment was already highly productive in 1900, with an output per hour of labour several times that of the US and France (Bakker 2008). Nevertheless, between 1900 and 1938 output measured in spectator-hours kept growing at 3.2 % a year, and about a third of this, 1.1 %, happened without any increase in inputs and thus was caused by the growth of Total Factor Productivity (TFP). TFP-growth was several times lower than in France and America. Given the high initial British productivity level, this is not that surprising. It is not inconsistent with the idea

that Britain had a hidden comparative advantage in media and entertainment that it could exploit once they became more tradeable.

The number of actors per capita increased sharply in the industrialising parts of Britain (Sanderson 1984), suggesting that Britain's comparative advantage, beside relative freedom and early media deregulation, was at least partially shaped by its early industrialisation, rapid urbanisation, and large market size. But because much of entertainment and media was not fully tradeable, this advantage remained partially hidden, and probably only could express itself in book exports and the trading of information (Bakker 2011a). In the early 1850s, for example, book exports were about seven times book imports.¹ In the last decade of the nineteenth century, however, the first two of a series of technologies that would make media and entertainment tradeable, the phonograph and the cinematograph, were commercialised. Once music and film thus had become tradeable, Britain could make more use of its comparative advantage.

The revealed comparative advantage (RCA) of British tradable entertainment products—their share in British exports over the worldwide industry's share in global exports—increased substantially during the first half of the twentieth century. Work by Crafts (1989) shows that the RCA for tradable entertainment products—in a category called 'Book and Film' that comprises most media products, including books, magazines, and records but also some other products (Table 1)—ranked 14th and 13th out of 16 industry groups in 1899 and 1913— ahead of only bricks and glass, wood and leather, and non-ferrous metals, while in Germany 'Book and Film' was the

¹ U.K. Parliamentary Papers, 1852 (196), vol. 28, pt. 1, as quoted in Temin (1997: 75-7). See also Weedon (2003) and the section 'The case of publishing', below.

Table 1. Revealed Comparative Advantage (RCA) rankings of the tradable entertainment sector for selected countries, 1899-1950

	Rank of tradable entertainment products					Change	
	1899	1913	1929	1937	1950	1899-1929	1899-1950
Britain	14	13	6	8	10	8	4
United States	13	10	6	7	6	7	7
Japan	10	8	5	4	6	5	4
Belgium	13	13	14	10	8	-1	5
Switzerland	8	10	9	8	8	-1	0
Italy	6	6	8	7	6	-2	0
India	6	7	8	6	6	-2	0
Germany	1	2	3	4	3	-2	-2
Sweden	10	11	12	13	13	-2	-3
Canada	4	8	8	8	11	-4	-7
France	3	4	10	3	6	-7	-3

Notes: RCA = revealed comparative advantage, which is the British industry's share in British exports over the global industry's share in global exports. The countries are ranked by the growth of their RCA in tradable entertainment between 1899 and 1929. Tradable entertainment products are labelled 'Book and Film' by Crafts, and comprise the following: 'books, periodicals and all printed matter, agendas, notebooks and boxed stationery, pens, pencils, toys, games and sports goods, gramophones, musical instruments, cameras, optical instruments, films and photographic paper, paintings and works of art.' The table shows the RCA rank of 'Book and Film' within 16 manufacturing industry groups that comprised 'Iron and steel, non-ferrous metals, chemicals, bricks and glass, wood and leather, industrial equipment, electricals, agricultural equipment, rail and ship, cars and aircraft, alcohol and tobacco, textiles, apparel, metal manufactures, and fancy goods.' The first number, 14, for example, shows that 'Book and Film' had an RCA that ranked 14 within the 16 British manufacturing sectors in 1899.

Source: calculated from Crafts 1989: 130-131.

top performing sector. Between 1899 and 1929, however, Book and Film's RCA in Britain increased rapidly, by 8 ranks, suggesting that the increasing tradability of entertainment benefited the British entertainment industry, and also the American one. Only Japan showed also an increase in entertainment RCA during this period. In Germany, France, Sweden, and Canada the RCA of tradable entertainment declined substantially.

By 1937 the British ranking was still 8th out of 16, ahead of industries such as iron and steel, cars and aircraft, and chemicals. Of the 16 groups, only 'fancy goods' experienced a similar improvement in its comparative advantage. In the US, 'Book and Film' ranked 13th and 10th out of 16 in 1899 and 1913 and had increased to 7th out of 16 by 1937. An obvious advantage of the US was its large domestic market size and less class-fragmented entertainment tastes. In absolute terms, however, German RCA in tradable

entertainment remained the highest of all countries throughout the period, except for 1937 (Table 1). France, India, and Japan held a surprisingly high RCA in tradable entertainment, in many years higher than the USA, though by 1950 their rank had become the same as that of the USA and higher than that of Britain. Yet the high degree of aggregation and the inclusion of several non-entertainment products leaves a high degree of uncertainty and makes precise conclusions difficult.

It is not easy to measure the effect of productivity changes in media between 1870 and 2010, because media output is not always readily measurable, and changing census classifications for those working in media and creative industries make inputs also hard to measure in the long run.

The number of actors, however, was recorded in all censuses until 1991 and therefore might be a good long-run indicator that broadly reflects the direction of long-run changes in productivity in the media and entertainment industries.² Figure 1 shows that the number of actors and actresses per million inhabitants increased sharply between 1881 and 1911, and after that declined gradually, while media and entertainment output increased enormously. The decline between 1931 and 1951, from 446 to 404 per million inhabitants, was an understatement, as the 1951 census category 'Actors' contained many occupations that in 1931 were grouped under 'Other occupations' in 'Entertainments and sport', such as, for example, aerialists, clairvoyantes, equestrian artistes, jugglers, lion tamers, magicians, Professors of Legerdemain, snake charmers and wizards (Census of Population 1951:112; Census of Population 1931:96).

² For an analytical history of acting see Sanderson (1984). For a detailed demography of actors in the nineteenth century see also Davis (1990, 2000).



Figure 1. Actors and actresses in England and Wales, number, number per million inhabitants, and number per £100 billion of real GDP, 1871-1991.

Note: from 1971 the census classification became more aggregate than just 'Actors' and adjustment have been made. The left axis shows the number. RGDP stands for the number of actors and actresses per hundred billion pounds of real GDP.

Sources: 1871-1951: Census of Population, category 'Actors'. 1971: Census of Population 1971, subtracting the 1981 fraction of musicians in the aggregate, and taking only the self-employed without employees from the aggregate category. 1981 and 1991: the 'self-employed without employees' in the industries 'Film production, distribution and exhibition' and 'Radio and television services, theatres, etc.' have been taken as an upper bound for the number of actors. The dotted line shows the 1981 and 1991 estimates using the same estimation steps as in 1971, but on an aggregate that is different from the 1971 aggregate.

Between 1951 and 1971 the fall was even more rapid, suggesting that television automated away the remaining live entertainment. The 1971 estimate is again an upper bound as entertainers, stage managers and musicians were now also included (a subtraction has been made for musicians, using 1981 proportions). After 1971, measurement becomes slightly problematic, as singers were now also grouped under actors, but musicians were listed separately. Therefore, the number of self-employed persons without employees in the film industry and in 'radio, television, theatre, etc.' has been used as an upper bound for the number of actors after

1971. These numbers suggest a further drop in the number of actors between 1971 and 1991.

Although we have to be careful when looking at exact levels, it remains clear that in the long run, actresses and actors declined substantially relative to population and GDP. Actors declined from about 500 per million inhabitants in 1911 to about 200 in 1991. If we assume that the quantity and quality of media consumed per capita remained constant (which it didn't), and that the education level of the entertainers remained constant, then labour productivity increased between 0.6 to 1.2 % a year for 80 years for these actors. This growth rate might of course hide a big growth in supporting personnel and capital, yet it gives us a rare peak into the economics of superstars.

Never have there been so many actors in existence as in 1911. The number per £100 billion of real GDP shows a similar movement, but peaked in 1921 rather than 1911, and showed a very steady decline. Whereas in 1921 Britain counted well over a hundred actors per billion of real GDP, by 1991, after a series of forgotten industrialisations, this had fallen to just twenty actors per billion.

Baumol and Bowen (1966) and Baumol (1967) argued that some industries, such as personal services, are inherently technologically stagnant and will show hardly any productivity growth and take up an increasing output share. The evidence of the case of media and entertainment shows that personal services do not need to be inherently technologically stagnant, but that in the long-run declining productivity growth can trigger an industrialisation process that does away with some of the personal service

aspects and increases the degree of non-rivalrousness of the service.³ In addition, the fact that old media industries kept existing, suggests that they were not stagnant, but dynamically differentiated themselves, adopted many process innovations and were able to change their capital/labour ratios in the face of competition by new media technologies (Bakker 2012c).

We have seen how new technologies can industrialise entire media industries. In the next section we will look inside these industries and investigate how their internal organisation and industrial structure could change over time.

3. Industry structure: four economic tendencies

Since 1870 the evolution of media industries has been dominated by four economic tendencies (Figure 2). The first was the importance of fixed and sunk costs relative to marginal costs, which affected the evolution of industry structure in media industries. Costs were sunk when one needed to incur them for entry but could not recover them on exit. Examples were the cost of producing a film, a record or a videogame. Sunk costs were endogenous when the entrepreneur could decide the level: one could decide to shoot a film for £100,000 or for £10 million. In some media industries, where it was relatively 'cheap' to improve quality, and in which consumers were sensitive to increased quality, quality races took place between firms, in which they escalated their sunk expenditure, hoping for disproportionately more revenues and profits. As a result, the industry structure often changed from highly

³ Nonrivalrousness is the extent to which one person consuming the good does not take away the quantity available to another person. See section 3, pp. 15-16.

Figure 2. *Economic tendencies in the development of media and creative industries.*

Economic characteristic	Dynamic implication	Historical expressions
Sunk costs	Quality race	Motion pictures 1910s and 1970s-1980s; Music industry 1950s-1960s; Videogames 2000s
Marginal revenue = marginal profits	Vertical integration	Motion pictures 1900s-1910s Music: 1900s; 1960s Videogames: 2000s
Toll good character (nonrivalrous but excludable)	Exclusion-focused business models Income inequality (superstars)	All media and entertainment industries
Project-based character	Agglomeration	Publishing Film industry 1910s-1920s Music industry Radio and television

Source: adapted from Bakker (2005, 2008, 2010, 2014).

fragmented to highly concentrated, with a few firms having very large market shares (Bakker 2014a; Sutton 1998).

In the film industry during the 1910s, for example, the emerging Hollywood studios started just such an escalation race when they stepped up their outlays on the feature film, then a novelty.⁴ William Fox, for example, backed by a group of venture capitalists, increased his production outlays twentyfold in one single year (Bakker 2005, 2012b). Many entrepreneurs did not survive these gambles, and those that survived would become the five big and three smaller Hollywood studios that remained in business for much of the rest of the twentieth century. British film companies lost out, and by late 1924 almost no film was produced in Britain anymore. A second quality race, again starting in Hollywood, but now in the 1970s, with the release of *Jaws* in 1975, would eventually seriously constrain a recovering British film production industry, and by 1981, almost sixty years after Britain's disastrous suffering

⁴ Under certain assumptions a big budget film can earn distributors five times more in cinema rentals than a film with half the production costs where both films compete for screen-time (Bakker 2004).

under the first quality race, the lowest number of British films since 1924 was made.

From the mid-1950s a quality race took place in music, in which emerging multinationals spent heavily on building large portfolios of artists and repertoire, on increasing the perceived quality of sound recordings, and on marketing and advertising. The rewards for getting it right were rising. In the US market, for example, average real revenues per new music copyright increased over 8 % per year in the fifteen years between 1955 and 1970 (Bakker 2011b). The British multinational EMI became a long-term survivor of this race and by 1980 had become one of the six global multinationals dominating international music production and distribution.

In videogames, since the 1990s, similar quality races have taken place, albeit that the picture was made more complicated by battles between different, incompatible gaming platforms. Britain had several large companies participating in the sharp increase in spending, but in the end they all lost out or were taken over by Japanese and American competitors (Bakker 2010a). Nevertheless, today Britain still has a significant industry of videogame production companies which often work under contract to the large multinationals.

The second economic tendency was that in the media and creative industries, marginal costs were often so low that marginal revenues largely equalled marginal profits. An additional chair filled in a cinema, an additional record sold, an additional viewer to a television programme increased marginal cost only by a very small amount, meaning that a large part of the additional revenue was gross profits (Bakker 2003). Given this fact, vertical

integration was often an optimal solution, as it gave an incentive to producers to increase the revenue-generating capacity of media products; they would share in the increased marginal revenues because of marginal changes in product quality.

The quality race in the film industry, for example, happened after selling of films was replaced by renting films to distributors and then to cinemas, and during the quality race producers integrated with distributors and started to build cinema chains, while for big cinemas increasingly percentage-based rental contracts replaced fixed fees. In the music industry, the early twentieth century record producers, such as the Gramophone Company, the Victor Talking Machine Company, Pathé, Gaumont and Carl Lindstrom, almost all had their own factories and distribution, and the same held in the decades after the Second World War.

Newspaper owners generally owned their presses, broadcasters their channels and some in-house production units, and videogame producers were often part-owned by distributors or had some percentage-based contracts, though they appear to have been less prevalent than in the film industry. Less vertical integration happened in books and in magazines.

Besides stimulating vertical integration, standard industrial organisation theory suggests that constant or falling marginal costs led to an excessive number of firms. Together with low exogenous sunk costs this had led to an enormous variety of media products and a dual market structure. In motion pictures, for example, the competitive escalation of endogenous sunk costs in quality races led to a vertically differentiated, highly concentrated market for big-budget Hollywood films, while low exogenous sunk costs and low marginal

costs led to excessive entry and a second, separate, fragmented market with an almost infinite variety of films, each having a very small market share (Bakker 2004).⁵ The latter market appears characterised by monopolistic competition: price is above the competitive level, but firms do not make long-run economic profits (Chamberlin 1933; Robinson 1933). This dual market structure characterised several media industries in Britain, such as film and recorded music production and publishing.

The third economic tendency was that most media and creative industries made products with a strong quasi-public good character: they were nonrivalrous but excludable. A product is nonrivalrous, sometimes also called nondiminishable, if one person consuming the good does not take away the quantity available to another person. One additional person 'consuming' national defence, for example, does not decrease the quantity available to others, while one additional person consuming bread does so. Pure public goods, such as national defence, are both nonrivalrous and nonexcludable and pure private goods, such as bread, are both rivalrous and excludable. In practice, rivalrousness and excludability are often a matter of degree, and quasi-public goods can be further divided into rivalrous but excludable goods, called *common pool resources*, such as fishing grounds or natural water systems, and non-rivalrous but excludable goods, called *toll goods*, such as private clubs, day-care centres or theatres (Ostrom 2010).

Some technical inputs to the media industry, such as broadcasting spectra, could be characterised as common pool resources, but most media outputs were toll goods. Until a cinema was filled to capacity, for example, one

⁵ Mezias and Mezias (2000) borrow the term resource partitioning from biology to study phenomena not unlike both dynamic product differentiation and dual market structure discussed here.

person watching a movie did not prevent another person watching the same movie, and one person subscribing to a cable channel did not diminish the subscription opportunity to other consumers. This non-rivalrousness, combined with the possibility to exclude consumers, led to the adoption of business models that focused on the point of exclusion. Theatres, for example, could prohibit entry and thus charge ticket prices, printed and recorded media could sell physical products protected by copyright, and the early broadcasters could exclude advertisers from the airwaves and thus get their revenue from them. Stars also were able to extract rents, with superstars earning very high fees (Bakker 2001). Our statistics about actors suggest that, at the very least, the number of actors did not increase after 1911, suggesting that since then fewer professional actors have existed, with amongst them just a few superstars who made large earnings.

The fourth economic tendency consisted of path-dependent agglomeration effects. Media industries often formed industrial districts in which they benefited from external economies of scale, a thick market for inputs and knowledge spill-overs. The benefits could happen within industries (Marshall-externalities) and between different media industries (Jacobs externalities). In Britain both type of agglomeration externalities were important. Some industries, such as news agencies, the music industry, the film industry and broadcasting located in and around London, and also benefited from each others' close presence. Other media creative industries were slightly more dispersed, though with a strong presence in London. Videogame production, for example, was far more spread-out across Britain than film or music production.

3.1 Dominant firms

Perhaps shaped by the four tendencies, in the British media industries dominant firms, sometimes near-monopolies, played a big role. In international news supply for example, around 1870 the Reuters news agency formed a cartel with the other big international agencies (Havas, AP and Wolff-Continental) and almost monopolised the market supply of international news in Britain. Its position became even more dominant when it merged with the Press Association in the 1920s (Silberstein-Loeb 2009; Bakker 2011a).

In music, the Gramophone Company held an extraordinarily large market share and had become one of the largest employers in Britain by the late 1900s, and also a large multinational. Through its merger with the Columbia Gramophone Company to form Electrical and Musical Industries (EMI) in 1931, it gained a near-monopoly on the British market, its market share fluctuating between fifty and eighty percent (Bakker 2010a). It was briefly challenged by the new entrant Decca in the 1930s, which pioneered the juke box and the saturation-selling of low-priced records by expensive superstars. During the war, however, the government forced Decca to sell its US subsidiary, and Decca never regained its former pre-eminence. It was only in the 1960s, with the entry of foreign companies such as Philips/PolyGram, CBS Records and Warner Records on the British market, that EMI's monopoly position started a slow but gradual decline.

In film, during the 1930s the flour magnate J. Arthur Rank started buying up film distributors, producers and cinema chains, as well as a 25 percent stake in the Hollywood studio Universal; in the 1940s, his firm had become larger than any Hollywood studio and dominated film production,

distribution and exhibition in Britain. Given the collusion of the Hollywood studios during the 1930s and 1940s, of which they were finally found guilty in 1948, it is difficult to emphasize the adverse effects of Rank's near-monopoly, as it might have counteracted the Hollywood collusion. Yet in the US market there still was some degree of rivalry between the eight Hollywood studios, and after the enforcement of competition policy by the US Supreme Court there still were eight independent organisations that could start to compete.

In national newspapers, some companies held large shares, but limits to those shares, regular entry and exit, and the constraints on the behaviour of individual firms prevented the rise of single large near-monopolies. Magnates like Lord Northcliffe, Lord Beaverbrook or Rupert Murdoch never dominated newspapers as Reuters, Rank, EMI or the BBC dominated their own industries. Likewise, in book publishing several large publishers emerged, but no firm held a near-monopoly.⁶

3.2 Advertising

An important part of the business model of many media industries was advertising. For newspapers and magazines it was an important source of revenue, without which they could not continue in their existing forms. For cinemas, advertising constituted some significant ancillary revenue, and for commercial radio and television they were the main source of revenue until the coming of subscription television channels. Besides, producers of films, radio and television programmes and videogames often had significant additional revenues through product placement.

⁶ For a survey on industrial concentration in the American media see Noam (2009).

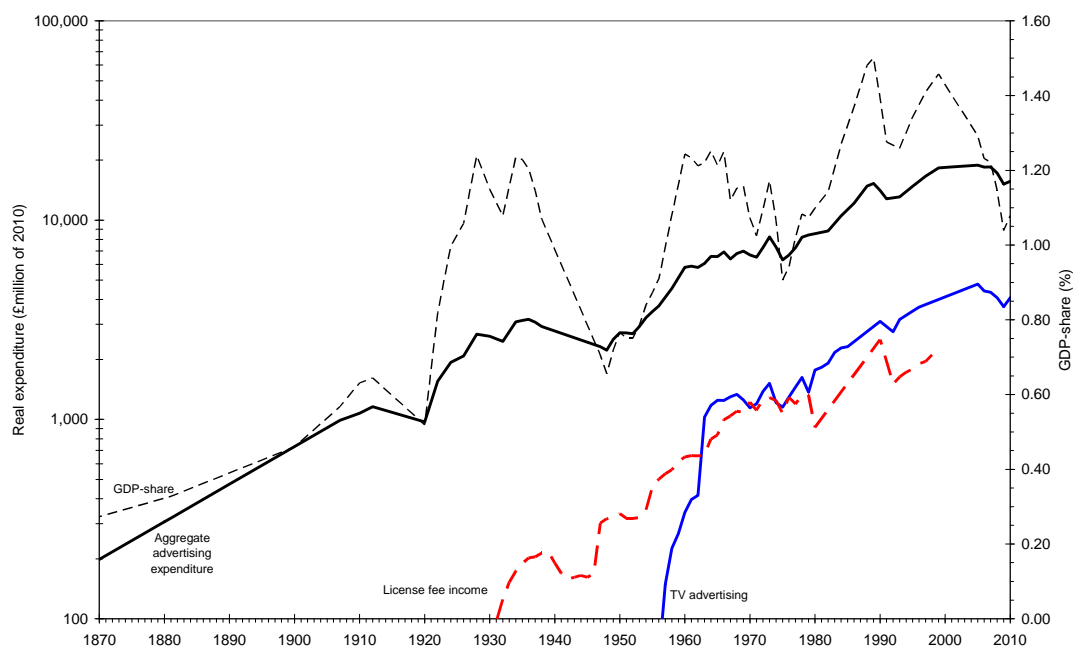


Figure 3. Total advertising spending in Britain, 1870-2010, in million pounds of 2010 and in percentage of GDP.

Notes: Television advertising expenditure is included in total national advertising spending. The BBC license fee income is not, but has been included as the concomitant media production will not be reflected in the advertising statistics.

Sources: calculated from Nevett (1982); Fletcher (2008); Ofcom.

An expert estimate based on advertising tax revenues suggests that around 1850, about £1m, or 0.2 % of GDP, was spent on advertising, the bulk of it going to newspapers (Nevett 1982). By 1907 this had grown enormously, to £12m, or 0.6 % of GDP, a real growth of 4.2 % per year for almost sixty years. This was the age in which many big brands were launched and entrepreneurs boldly pioneered the effects of massive marketing campaigns.

From 1907 until the First World War, real expenditure kept growing sharply, at 3.3 % per year (Figure 3). By 1920, expenditure had fallen sharply, but then from 1920 to 1928 it started to grow phenomenally at 9.2 % per year, reaching a peak in 1935. In 1938, the closest year for which reliable disaggregated data is available, 55 % (£42m current) of all advertising expenditure went to newspapers and magazines, 13 % to direct mail, 8 % to

outdoor advertising, 7 % to window displays, 2 % to radio, and 1 % to cinema. The remaining 13 % was spent on advertising departments, agencies fees and miscellaneous categories.⁷ According to an independent estimate, radio advertising had grown from almost nothing in 1933 to about £0.8 million in 1935, and £1.7 million in 1938, a real growth of 25 % per annum (National Institute of Economic and Social Research, 1946). Given the British penchant for monopoly at the time, all expenditure was made on Radios Luxembourg, Normandy, Paris, Lyon and Toulouse, which were widely listened to in the UK.

The 1935 peak would only be equalled again in 1954. Between 1948 and 1960 there was very sharp growth, of 7.9 % per year, possibly brought about by increases in radio advertising and the emergence of television advertising. Between 1975 and 1989 a new growth spurt took place, with a 6.6 % real growth per annum. In terms of GDP-share, advertising reached its highest share, 1.5 %, in 1989. Over the whole period 1870-2010, real advertising expenditure grew with 3.1 % per annum. Between 2000 and 2010, internet-based advertising grew from almost nothing to 26 percent of expenditure.

The growth figures hide a phenomenal growth in real market size: the advertising market in 2010 was about 80 times the advertising revenue in 1870, and 200 times the 1850 revenue—showing that also on this side market size had increased enormously; this was very relevant for media industries, as most of their costs were fixed and sunk, and marginal costs were low. Many technologies that were used in 2010 might not have been viable, *ceteris paribus*, in 1850, because the limited market size did not warrant the high fixed and sunk costs involved (Bakker 2013). The same underlying pattern is

⁷ Estimates for 1935 show a very similar disaggregation, except for a much lower share for radio of 0.4 % (Kaldor and Silverman, 1948).

visible in the growth of particular media industries, and this is what we are going to investigate in the next section.

4. Creative destruction: emergence, growth and decline of British media industries

Comparing several media industries over different intervals shows that growth rates ranged from 1.3 % per year for cinema to 11.4 % annually for videogames (Table 2). Broadcasting appears to have been the fastest growing industry in the long-run, on average growing 2.3 times faster than GDP for 80 years. When comparing GDP-shares, it becomes apparent that most industries went through a phase of growth, peak and relative decline (Table 2). Actors per capita peaked in 1911, when the GDP-share of spectator entertainment was one percent, newspapers during the First World War, when their share was 0.8 %. The largest share ever was that of spectator entertainment in 1946, on which was spent almost 2 % of GDP. Never after would so much be spent on a single category. GDP-shares could decline for many different reasons: the industry could become so productive that its prices dropped significantly, people could turn to other media, or GDP could grow faster.

The absolute market sizes at the peak GDP-shares are also telling. When recorded music peaked in 1974, it was still smaller than spectator entertainment in 1911, despite population and GDP-growth. At its peak GDP-share in 1992, the market for books was just one and half times that for spectator entertainment eighty years earlier.

Table 2. Estimated real market size and GDP-share of selected media industries in Britain, 1870-2010.

	Real market size (£million of 2010)									GDP £billion (2010)	
	Advertising	Publishing			Theatrical entertainment		Recorded music	Broad- casting	Video- games		
		All	Books	Newspapers	All	Cinema					
1870	200		(75)							79	
1880	310		(90)			990				95	
1890	470	640	(140)			1,310				120	
1900	730	1,260	210	700		1,650	(28)			160	
1910	1,070	1,550	230	870		1,760	(270)	(50)		170	
1920	970	1,700	290	900		1,760	(810)	(74)	3	190	
1930	2,610	2,970	420	1,660		3,000	(2120)	250	76	230	
1938	2,930	3,190	480	1,780		3,230	2,070	53	210	270	
1950	2,730	3,850				4,730	2,810	150	340	360	
1960	5,800	4,510	950	2,410		3,360	1,140	440	990	470	
1970	6,680	5,550	1,080	3,130			710	780	2,360	620	
1980	8,570	5,990	1,530				450	1,430	2,680	80	780
1990	14,090	8,290	2,510	3,880			330	2,370	5,680	340	1,010
2000	18,380	8,000	2,630	3,520			770	2,690	10,240	1,230	1,280
2010	15,680	7,000	2,200				990	1,240	11,700	1,980	1,460
Interval	1870-2010	1890- 2000	1870- 2010	1900-2000		1880- 1960	1910- 2010	1900- 2010	1930- 2010	1980- 2008	1870- 2010
Peak year	1989	1932	1993	1916		1946	1946	1974	2010	2008	2007
Length (years)	140	110	140	100		80	100	110	80	28	140
St/So	79	13	29	5		3	4	44	154	25	18
CAGR (%)	3.1	2.3	2.4	1.6		1.5	1.3	2.0	6.3	11.4	
GDP-growth	2.1	2.1	2.1	2.1		2.0	2.1	2.4	2.3	2.3	2.1
CAGR/GDPgrowth	1.5	1.1	1.2	0.8		0.8	0.6	0.8	2.7	4.9	

Table 2 (continued).

	GDP-share (market size as percentage of GDP)									
	Advertising	Publishing			Theatrical entertainment		Recorded music	Broad-casting	Video-games	
		All	Books	Newspapers	All	Cinema				
1870	0.25		(0.10)							
1880	0.32		(0.10)			1.05				
1890	0.38	0.51	(0.11)			1.06				
1900	0.46	0.79	0.13	0.44		1.04	(0.02)			
1910	0.63	0.91	0.13	0.51		1.03	(0.16)	(0.03)		
1920	0.52	0.91	0.16	0.48		0.94	(0.43)	(0.04)		
1930	1.15	1.30	0.19	0.73		1.32	(0.93)	0.11	0.03	
1938	1.07	1.17	0.18	0.65		1.18	0.75	0.02	0.08	
1950	0.77	1.08				1.33	0.79	0.04	0.09	
1960	1.24	0.97	0.20	0.52		0.72	0.24	0.10	0.21	
1970	1.07	0.89	0.17	0.50			0.11	0.13	0.38	
1980	1.10	0.77	0.20				0.06	0.18	0.34	0.01
1990	1.39	0.82	0.25	0.38			0.03	0.23	0.56	0.03
2000	1.43	0.62	0.21	0.27			0.06	0.21	0.80	0.10
2010	1.07	0.48	0.15				0.07	0.08	0.80	0.14

Notes: GDP-share is the (gross) consumer expenditure as share of GDP.

St / So = market size of final year over market size of initial year

CAGR = compound annual growth rate

peak year = the year in which the GDP-share of the industry was at its zenith

Values of £100m and above have been rounded to the nearest £10 million. Real market size and GDP deflated using the long-run retail price index series from Officer (2013).

These values are estimates based on the available evidence for each particular industry, based on the sources quoted below, and should be seen as an approximate long-run indication. Especially for long-run series they do not always come from the same sources and may not be strictly comparable.

In some cases it was not possible to get the exact decadal year because data could not be traced for that year or was incomparable to other years. For 1880, theatrical entertainment is for 1881; for 1890 theatrical entertainment and publishing are for 1889; for 1920, broadcasting is for 1923; for 1960, advertising and theatrical entertainment are for 1959; for 1970 books and newspapers are for 1969; for 1990, newspapers are for 1992; for 2000, newspapers are for 1998.

The music series is based on figure 3. The estimates for film for 1910-1930 have been made using a growth index based on the growth in the number of cinema seats recorded by London County Council for 1911-1929 (after having established that the growth of all seats closely follows real amusement expenditure growth as reported by Prest (1954) and Stone (1966)); using total UK cinema expenditure as reported by the US Department of Commerce (1916); and, finally, using the growth of released negative length since 1910.

The estimates for books for 1870-1910 have been made using the average share of books in publishing in the Stone (1966) series in the early 1920s, and linking this to the Prest (1954) series, and the total retail value of books produced minus the value of exports as reported in Weedon (2003).

Broadcasting expenditure includes BBC license fee income, advertising expenditure and, from 1990, subscription television expenditure.

Sources: *Annual Abstracts of Statistics*; Bakker (2011b); British Phonographic Industry Association; EMI Archives; *Entertainment Retailers Association Yearbooks*; Fletcher (2008); Henry (1986); House of Lords (2010); Levi (1882); Mitchell (1988); Monopoly and Mergers Commission (1995); Nevett (1982); Performing Rights Society; Ofcom; Prest (1954); Publishers Association; Stone (1966); U. S. Commissioner of Labor Survey (1890); Weedon (2003).

Even though in most industries GDP-shares eventually declined, the absolute size of the market—except for cinema—did not. A striking example was the recorded music market, which after its implosion in the 2000s was still about 5 times its 1930 size, even though its GDP-share was about the same as in 1930. Over the measured intervals, the factor by which the market grew varied from 3.4 times for all spectator entertainment to 25 times for videogames, and a whopping 154 times for broadcasting (Table 2). This shows that there was a substantial potential to realise economies of scale.

Time and again a new media industry emerged, while old media remained, but lost in relative importance. The media industry in 2010 had far more submarkets, and far more distribution capacity than had been the case in 1870.

4.1 The case of publishing

One of the oldest modern media industries is publishing. In 1870 a large book, magazine, and newspaper publishing industry already existed (Feather 2006). Book exports had increased from 0.2m kilograms in 1828 to 3.1m kilograms by 1868, an annual increase of seven percent, and since then the value of book exports deflated by the retail price index increased by three percent per annum until 1898, when they were £1.3m in current pounds (Weedon 2003: 187-91). A household expenditure survey of 1889-1890 suggests that £7.4m, or 0.5 % of GDP, was spent on 'reading'. Books were sold outright or could be borrowed from libraries, often commercial or non-profit circulation libraries. New types of printing presses made cheaper and mass-printing possible, and

quality was increased at the end of the nineteenth century by the possibility of printing photographs, and some time later by the ability to add colour. Prices came down substantially. The real price of paper, for example, decreased by 2.6 percent per annum between 1866 and 1906 (Weedon 2003: 66-7). Urbanisation and transportation innovation made rapid, cheaper, and wider distribution possible.

During the nineteenth century, the number of editions and the copies per edition increased gradually. Between 1846 and 1916 book production quadrupled, print runs doubled and prices halved. The number of copies printed increased from 9 to 35 million, an average annual increase of 2.0 percent. The current retail value of output increased from £2.7m in 1866 to £5.7m in 1906 and £7.4 million in 1916 (Weedon 2003: 55). In 1911, about 1,250 first editions of fiction for adults were published in Britain, as well as 950 reprints. The number reached about 2,000 first editions and 2,900 reprints in 1935, which comes down to an average annual growth of 3.4 % in the number of published editions—which does not, of course, necessarily reflect the growth in the number of copies sold. Over the same period editions of all classes of books grew from 8,500 first editions and 2,400 reprints in 1911 to 11,500 first editions and 5,000 reprints in 1935, an average annual growth rate of 1.8 % (McAleer, 1992). Books' GDP-share only peaked in 1992 at 0.3 %, which might not be unrelated to the growth in average education levels.

Real expenditure on newspapers increased on average by 3.4 % per year between 1900 and 1938, and expenditure on books and periodicals grew at the same rate (Table 2). Between 1900 and 1919, the number of copies sold per 100,000 inhabitants, grew by 2.7 % annually, on average, while real

prices remained nearly unchanged. Relative to GDP, the newspaper market reached a peak in 1916, at 0.8 % of GDP.

The market for books, newspapers and periodicals as a whole grew rapidly until 1907, then stabilised until 1920, and then increased steadily until 1933, after which it slowly declined. After the war, the market showed steady long-run growth. The GDP-share increased until 1932 to 1.4 % and then gradually decreased to 0.7 % in 1998. Nevertheless, the market size in 1998 was almost three times the 1932 market size, suggesting that the industry must have benefited from substantial scale effects, even with a declining GDP-share.

4.2 The case of recorded music

Besides audiovisual entertainment, other media also experienced substantial productivity growth through adopting radical innovations. Here we will discuss the case of the recorded music industry in more detail.⁸ From the 1890s, recording and playing back music through the phonograph or the gramophone, made music tradeable and created the modern music industry (Bakker 2006, 2011b). The British Gramophone Company, which would later become part of EMI, was one of the industry's leading firms, and one of the largest firms in the world as well, manufacturing players and records in many countries (Jones 1985). The industry's further development has been shaped by a succession of new products. In the 1920s radio arrived, providing both a complement and substitute for records, in the 1930s jukeboxes were

⁸ Outside of recorded music, piano manufacturing and sheet music publishing were among the fastest growing industries during the nineteenth and early twentieth centuries. See Ehrlich (1990) and Carnevali and Newton (2013).

introduced, and in the 1940s the LP and the EP, merging into one compatible standard in 1952. In the 1950s audiotape was introduced, succeeded by audiocassettes from the 1960s. The 1980s started with the worst record sales slump since the 1930s, which was ended with the introduction of the compact disc, which started a new boom. In the late 1990s, MP-3 files supplied through the internet became increasingly popular, and in the 2000s, internet distribution was gradually becoming the standard. A myriad of smaller innovations, such as stereo-records, Dolby noise reduction and quadraphonic sound were introduced along the way.

The music industry's GDP-share has been low, far lower than that of film. It was about 0.1 per cent of GDP in 1930, and then sank to 0.02 per cent during the depression years (Figure 4). By the late 1950s it had reached 0.1 per cent again, and during the early 1970s it reached an all-time high of 0.29 per cent of GDP. It then declined to about 0.18 per cent during the 1980s depression, but was pushed up again by the advent of the CD, reaching 0.28 per cent in 1987. By 2010 its share at retail value had sunk to 0.08 per cent. In part this might reflect a sharp jump in total factor productivity (TFP) in the industry because of the adoption of digital downloads. In 2010, 25 per cent of retail music sales by value was downloaded; distribution and manufacturing costs were considerably less for digital downloads. However, efficiency gains were constrained by the extent to which costs in physical distribution systems were fixed. Yet, the average annual real price decline of 9.8 per cent a year since 2001 shows that efficiency gains had been realised, whether through lower costs or lower margins.

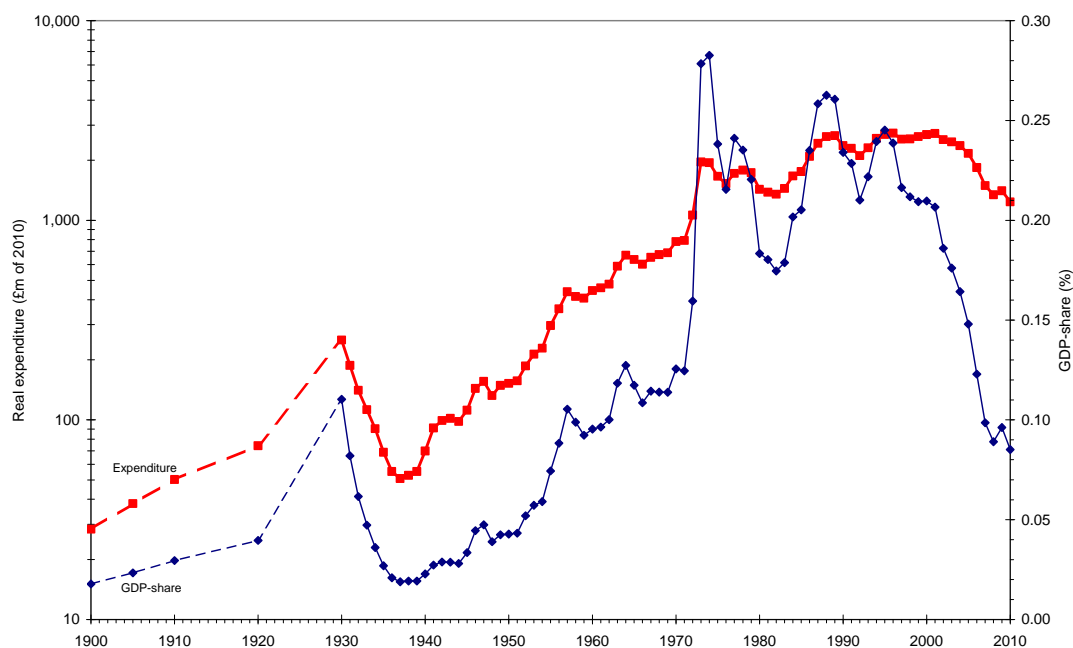


Figure 4. *Expenditure on recorded music, in millions of 2010 pounds and as percentage of GDP, 1930-2010.*

Note: rough estimates were made for 1900-1920 using the growth of the annual UK sales series of the HMV, Zonophone and Twin record labels for 1905-1930, deflated by the Retail Price Index and linking this to the 1930 national expenditure. Consumer expenditure for 1988 to 1997 was estimated based on trade deliveries using the relationship of the latter with consumer expenditure for the years 1978-1986 and 1998-2006.

Sources: "The demand for Gramophone records. A review of Gramophone record sales between the years 1905 and 1951," Controller's Department - Economics Section, 1 August 1952; Managing Director Minutes, and "Statistics mailed to Statistical Department," EMI Archives, London; British Phonographic Industry Association; Entertainment Retailers Association Yearbooks.

The long-run growth pattern thus shows a sharp slump between 1930 and 1939, an almost continuous medium-term increase between 1940 and 1973, stagnation between 1973 and 1985, sharp growth from 1985 till about 1992, stabilisation between 1992 and 2001, and sharp decline since 2001. Yet in terms of quantity, UK consumers probably consume more music per capita than they ever did before.

Comparing the real expenditure and GDP-share figures reveals an important pattern that we see in some other media industries as well: while the GDP-share of music in 2008 was about the same as in 1930, the absolute

expenditure was about three times as much. This matters very much for media industries, because most costs were fixed and / or sunk. The three times larger market size in 2008 could thus allow higher sunk outlays, either on more diversity or on a higher perceived quality per product.

The music business model involved playing lots of music on radio, especially after 1952 when most other radio programming moved to television, and this probably was an important factor in the reanimation of the music industry in the mid-1950s (Bakker 2006; 2011b). Radio stations had more airtime for music, and also could cater to more diverse musical tastes. In the 1930s, in addition the British record company Decca pioneered the juke box model of selling music; this business model allowed it to make substantial profits in an age when music expenditure was minimal, combined with releasing the lowest-priced records for only existing stars ('leading artists, low prices'). It made Decca a large music firm in the US and in Britain, where it broke the near-monopoly of EMI. It was forced to sell its US subsidiary during the war, starting a gradual but long-run decline and marginalisation, until it was sold to PolyGram in 1979. Had it been allowed to keep its US assets the outcome might have been very different. Another business model in the 1930s was the hit songs based on films; although research on this for Britain has still to be done, these were a very large share of the best-selling records in the US.

4.3 The case of broadcasting

Throughout its history, broadcasting grew remarkably, with an unprecedented 6.3 % average real revenue growth per annum from its inception in 1923 (Table 2). In the early 1920s the BBC monopoly on radio broadcasting was established. According to Tunstall (1983: 46-49), between 1922 and 1939 the BBC had learnt the habit of deference to four key 'veto groups' that could threaten its monopoly: the major political parties, the press, engineers, and the London cultural establishment. The BBC did not offer advertising, according to some not to antagonise the press, and many companies advertised on French and Luxembourg radio stations that became popular in Britain. Other countries tried different forms of broadcasting regulation. The United States allowed commercial broadcasting while the Netherlands allocated all air-time to four large and several smaller non-profit organisations representing cultural and social streams in society, and from 1968 introduced free entry and exit, in which foundations could compete for airspace through their number of members, and also, since 2006, through product quality.

Between 1936 and 1939 the BBC broadcast television from London to about 10,000 television sets. After the war the broadcasts resumed and in 1955 a second television channel, ITV, was made available for commercial broadcasters, who could bid for a regional franchise and had to fulfil some public service requirements in their programming and offer a joint news service. Several times since, the franchises have been put up for bids again. In 1964 a second BBC channel was added, and in 1982 a second public broadcaster, Channel 4, which was non-profit but sold advertising through ITV and focused on innovative and minority programming not offered by other

channels. The 1980s also saw the rise of cable and satellite channels. By the early 1990s the BSkyB company had become an important subscriber based satellite service. In 1997, the fifth terrestrial channel, Channel 5 was added.

Since the 1980s several important shifts have taken place. First, television production changed from in-house production to commissioning from independent producers. Channel 4's remit was to use only external production companies, and from 1990 the BBC and ITV were required to source at least 25 % of programming from outside. The independent sector boomed, as did Britain's television exports. Pearson Television became a leading exporter of game shows and game show formats, and BBC World Wide, owned by the BBC, became Britain's main global television exporter, exporting many outside television programmes as well, and also venturing in adjacent business such as magazines and travel guides. Endemol Entertainment, Pearson's main international competitor in game shows, and maker of *Big Brother*, came from the Netherlands, where a similar focus on outsourcing by public broadcasters had existed for longer, and many export-oriented companies had emerged.

Second, prime time programming changed remarkably, from mainly American series in the mid-1970s, to almost exclusively British content by the 2000s.

Third, subscriptions became a new revenue source, and eventually grew bigger than either license fee or advertising, constituting 41 percent of all television revenue by 2010. Cable and satellite broadcasting made exclusion possible, and thus subscriptions. Subscription revenues were also more recession proof, as they fell less during recessions than advertising, as

viewers' opportunity costs declined. Subscription television also made content less focused on the lowest common denominator and more specialised, as each subscriber needed to like only one programme enough to renew the subscription, rather than that the audience per programme needed to be maximised for advertisers.

Broadcasting appears to have been the fastest growing industry in the long-run, on average growing 2.5 times faster than GDP for 85 years (Table 2). Regulation probably kept the industry artificially small during early years, while the possibility of exclusion through subscription television drove growth in later years.

The key reason for direct intervention in broadcasting was probably remedying perceived market failure, followed by protecting indigenous culture and perhaps trade promotion and propaganda, through for example, the imperial broadcasting services and later BBC World and services like BBC Persian.

5. The impact of media industries on the aggregate economy

Health care is extremely important to consumers, but also has a concomitant large and growing GDP-share—it is often argued to be one of the prime examples of 'Baumol's disease' we discussed earlier. In contrast, because of the radical industrialisations discussed above that passed almost unnoticed and yet massively increased media productivity, media's aggregate GDP-share has hardly grown since the 1930s. However, many people, like the organisers of the Olympic Games, intuitively sense that media industries are

far more important than their tiny GDP-shares suggest. This section will explore how we can explain this gap between perceived importance and GDP-share. Below we will discuss welfare reflected in opportunity costs; consumer expectations and aspirations; effects on market functioning through information transmission, the shaping of morals and advertising; education; and finally, the effect on the process of institutional change.

5.1 Time is money

The first channel through which media industries affected the aggregate economy was through their high opportunity costs. The large amount of time that consumers spent consuming media and entertainment products implied that the welfare impact of these products was much larger than their GDP-share suggested. Goolsbee and Klenow (2006) showed that the value of the time used to consume or use products can be used to proxy the welfare effects of these goods.

Take, for example, the price of cinema tickets. Although the money consumers spent per hour on watching movies decreased, the value of an hour increased enormously, making the share of movies in GDP weighted by their full costs (price plus opportunity costs in the form of lost wages) increase (Bakker 2009). In 1934, for example, the price of a film ticket was 4 pence (£2.05 in today's money) and now it is £5.18, a growth of one percent per year, while real wages grew 1.8 % annually. In 1934 the full cost of a 2.5-hour cinema visit was the £2.05 ticket price and 2.5 hours times an average hourly wage of £3.39, resulting in a full cost of £10.53, while today the full cost is

£5.18 ticket price and 2.5 hours times average hourly earnings of £12.77 resulting in a full cost of £37.11—a growth of 1.7 % annually (Bakker 2010a). Eighty percent of the growth in real full costs was driven by opportunity costs increases, the wage increases in the above calculation. If these reflected welfare changes perfectly, welfare grew almost twice as fast as price over those 75 years.

Including films on DVD and television, consumers spent 7551 million hours watching films in 2008, 2.4 % of available time for work and leisure and 3.7 % of available leisure time. Expenditure was just 0.3 % of GDP. This suggests that films were about 8 to 12 times more important to consumers than their GDP-share would suggest. Cash expenditure on films was £3.7 billion, total opportunity costs – what viewers could have earned working instead of watching films, was £96 billion (7551 million hrs * £12.77/hr). The average price per hour was roughly £0.49, which compares to a 1934 price of £0.82, a decline of 0.7 % per annum. Average full costs per hour were £13.20, which compares to £4.21 in 1934, an increase of 1.7 % annually.

Products that claimed time from consumers in which they could hardly do something else, such as cinema and live entertainment and to a lesser extent videogames, books, newspapers and magazines, had the highest opportunity costs and therefore perhaps also the highest welfare impact.

5.2 Expectations and aspirations

A second channel through which media industries made a direct welfare impact was through the media's effect on consumers' life expectations and

aspirations. Cinema, radio, television and the internet and the coincidental advertising, showed consumers new possibilities and so increased both their ambitions and expectations. One could speculate whether increased expectations because of television played a role in the alleged near-stagnation of 'happiness' in Britain since the 1950s (Layard 2011; see also chapter 5). Nevertheless, it is very difficult to say anything about this. The happiness surveys generally have an upper limit, so happy respondents cannot get happier over time and the responses are not intersubjectively comparable, unlike income. The concept of capability might be more useful (Sen 1999), as it is objectively measurable and takes into account what people can actually do; it can, for example, explain the difference between happy humans and happy cats. For a penetrating critique of happiness studies and of attempts to measure happiness see McCloskey (2012:16-23).

5.3 Market functioning

A third channel through which media industries affected the aggregate economy was by influencing the way markets functioned. We will discuss information transmission, moral conditioning, and advertising in turn. First, the telegraph, news agencies, newspapers, magazines, radio, television and social media improved the speed and quality of information transmission within the British economy (Bakker 2011a; Kaukiainen 2001). Incidentally, Britain also became a large exporter of information, with news agencies in the 2000s exporting about fifteen times more than Britain imported. The disadvantage was that better and faster information transmission also

increased self-feedback influencing opportunities (herd behaviour) as well as opportunities for manipulation (Soros 2000).

Present day studies in finance suggest that news media affected the movement of financial markets, although the magnitude of the effect differed substantially. It also remains the question to what extent media reporting generated self-feedback effects, or self-reinforcing herd behaviour. Some authors, such as Robert Shiller (2009), argue that there was a substantial effect of the media in instigating bubbles, while other authors find the obverse. Campbell et al. (2012), for example, find that press coverage did not feed the British railway mania in the 1840s, and Bhattacharya et al. (2009), find that media reporting played only a very limited role in the internet bubble of the 1990s. Longitudinal studies for the twentieth century show that during crises, the financial markets were far more sensitive to media reports, both of reports containing new information and of more 'persuasive' reports only increasing exposure of a particular stock (Tetlock 2007; Garcia 2013; Engelberg and Parsons 2011; Bakker 2014b).

A second way in which media industries improved market functioning was by reducing transaction costs through stringent informal production codes and conventions, possibly affecting and conditioning the morals of market participants by showing them simulated worlds with examples of acceptable behaviour, and thus decreasing opportunism and dishonesty in transactions. Without a production code, the obverse was also possible. In the words of Margaret Atwood (2012:69), "Are narratives a means to enforce social control or a means of escape from it?" In addition, Pinker (2011) argues that the novel and other nineteenth century fictional forms allowed a person to better

imagine other persons' points of view, and thus reduced violence. In the 1930s a screenwriter for Gaumont-British, for example, noted many types of stories that could not be filmed in Britain because of moral concerns. Modern neuroscience experiments have shown that, based on the fictional cues of a stage or a film, the human brain builds a simulation that leaves out all the imperfections and gets into a hypnotic state of complete absorption and loss of self-reference, which is not inconsistent with media enabling virtual social experimentation and moral conditioning (Frazzetto 2012).

In addition, the mere replacement of activities with negative externalities by media consumption reduced transaction costs. The temperance movement in nineteenth century Britain, for example, saw 'rational recreation' as a way to reduce drinking and other vices, and in the US in the 1990s and 2000s, the screening of violent movies significantly reduced violent crimes and alcohol consumption on the evening of the screening and the night afterwards, with no intertemporal substitution for at least three weeks after (Dahl and Dellavigna 2009).

A third way in which the media and creative industries affected market functioning was through enabling new forms of advertising. New media technologies, in combination with advertising, had an important influence on competition and market structure in consumer goods industries. Radio and television were especially suited to persuasive brand advertising rather than price advertising. In some industries, such as frozen food, soups and shaving materials, changes in advertising may have increased concentration, because leading brands could advertise and get a larger market share; in other industries, such as contact lenses, advertising may have increased price

competition and in that way increased industrial concentration (Sutton 1991). The advent of full colour magazine advertising, cinema advertising, and the absence of radio and television advertising until late in the period had important effects on market structure in these industries.

5.4 Education

A fourth channel through which the media industries affected the wider economy was through their role in education. Through publishing and educational television they supported education directly, but they also educated consumers indirectly. Taylor (1976: 181), for example, noted that “The cinema was the greatest educative force of the early twentieth century. Yet highly educated people saw in it only vulgarity and the end of old England.”

5.5 Shaping the means for institutional change

Finally, the fifth channel through which the media industries affected the aggregate economy was by shaping the means for institutional change. The main media affecting social action were publishing, live, radio, television and online social media, and to a far lesser extent, music, films, books and videogames. Initially, the potential danger of media was considered so great that, before the 1840s, only a few theatres were licensed to stage plays. The Belgian revolution of 1848 actually started in a theatre. Paradoxically, until 1968, a year full of media-covered social unrest, every play performed in

Britain was preventatively censored by the Government. In the nineteenth century newspapers and magazines helped people to organise for political causes. At the same time, the media may sometimes also have moderated the pace of institutional change and prevented radical turns by increasing empathy. Bismarck, for example, famously remarked that Britain would never have ideological socialists because horse-racing—which brought classes together—was so popular (Steinberg 2011: 373; Evans 2012). During the twentieth century radio and television became important, and eventually the internet helped people to form new primary action groups.⁹

The political scientist Joseph Nye (2004) argues that states use media as a 'soft power' to stimulate institutional change in other countries, soft power being instead of 'something that could be dropped on your foot or on cities', 'something that might change your mind about wanting to drop anything in the first place'. In the 1960s, for example, South African Prime Minister Hendrik Verwoerd 'more or less put TV in a category with atomic bombs and poison gas', and when in 1971 South Africa discussed whether to finally allow television, the former minister of post and telegraphs argued that it 'would lead to the demoralisation of South African civilization and the destruction of apartheid.'¹⁰ In the 1980s a monument in Prague for John Lennon became a rallying point for demonstrations for peace and democracy and calls for the removal of Soviet troops. As Nye notes, eventually 'Lennon trumped Lenin'.

Nye argues that Britain used soft power deliberately since at least the interwar period and that the BBC's international services and popular music such as the Beatles and the Rolling Stones were important contributors to

⁹ Primary action groups are 'decision-making units' that 'govern the process of arrangemental innovation' that leads to new institutions, law and regulations. See North and Davis (1971:8).

¹⁰ *Time* 20 November 1964, p. 40; Nye (2004: 51, 2012: 82).

institutional change elsewhere in the world. In the 2000s, France, Russia and China followed the British and American soft power examples and started their own 24-hour English broadcasting channels.

Comparing how media and creative industries improved short-term and long-term market functioning through their effect on information transmission, morals, market structure and institutional change (channels three and four above) shows that only radio, television and online social media each had all four effects, perhaps underlining how powerful and new these media were to what came before them, and how large and multidimensional their effect has been on the British economy between 1870 and 2010. Research on an earlier era corroborates the large impact new media had: it finds that European cities that adopted the printing press in the late fourteenth century, grew between twenty and eighty percent more than comparable cities over the next century, controlling for all else (Dittmar 2011).

At least from Roman Britain onwards, externalities such as those discussed above have been used to justify public intervention in the media industry. To this intervention we now turn.

6. Policy towards media industries

Although the process of industrialisation described above was pervasive throughout the media industries, it was not unconstrained; during our long twentieth century, policy modulated the inevitable forces of industrialisation, leading to different outcomes in different industries. Those that experienced a

high degree of intervention were live entertainment, film, radio and television. Key reasons for policy intervention included raising fiscal revenue, protecting indigenous culture, remedying market failure, protecting the balance of payments, kick-starting path-dependent agglomeration benefits, and, finally, trade promotion and propaganda. The tools to achieve these objectives included the shaping of general industry infrastructure, safety and standard regulations, special taxes, indirect intervention and, finally, direct intervention (Bakker 2010b). We will not give a detailed description of the history of policy in every media industry, for which other works can be consulted. Instead, we will juxtapose the sharp policy intervention in the film industry with a near-absence of that in the recorded music business.

6.1 The case of the film industry

Raising fiscal revenue was one of the first objectives for intervention in the film industry. In 1916, the Entertainment Tax was introduced, charging between a 25-50 % tax on film and live entertainment tickets. The latter had lower rates, thus increasing the relative price of film tickets. The tax was only abolished in 1960, after a sharp decline in the number of cinemas. The various film production tax breaks introduced since the late 1970s also were partially meant to raise fiscal revenue, by shifting foreign expenditures into Britain.

Protecting indigenous culture became a main objective in the mid-1920s, when British film production almost ceased. The Film Quota Act (1927) was introduced, and led to a production boom (figure 5). The Act was

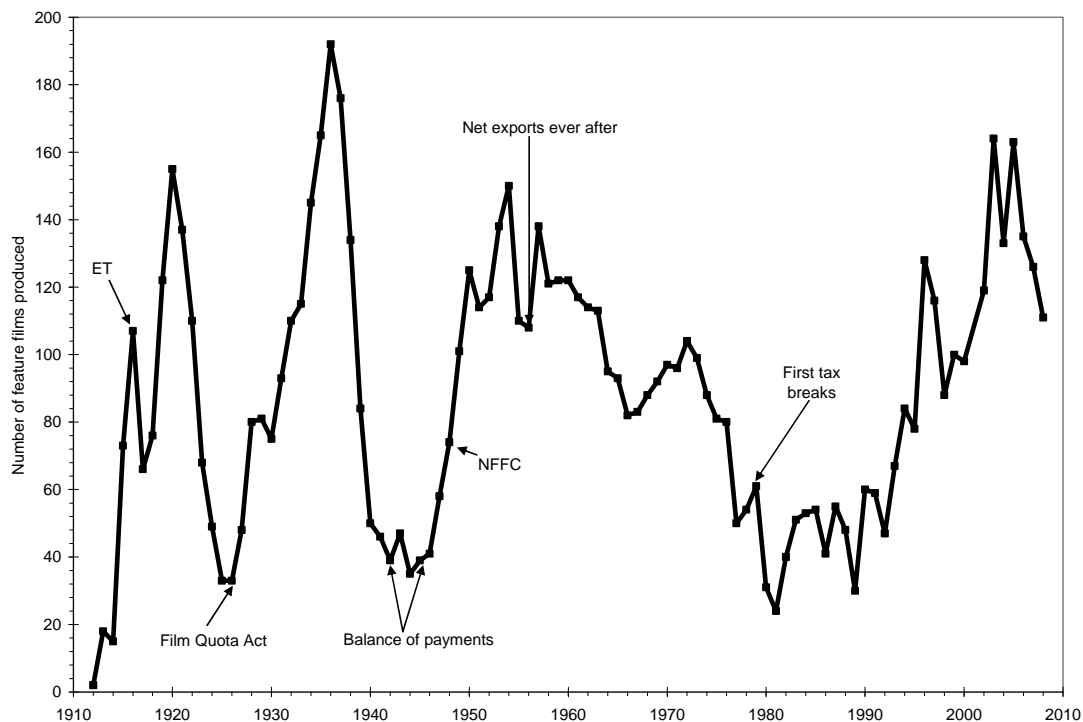


Figure 5 *The number of feature films produced in Britain, 1912-2008.*

Notes: ET = Entertainment Tax; NFFC = National Film Finance Corporation.
 Source: British Film Institute, Film Council Statistical Yearbooks.

renewed in 1936, and quotas were finally abolished in 1983 (Sedgwick 1994, 1997). While Britain considered direct intervention in the film industry, it did do so only in 1949 with the founding of the Film Finance Corporation and the Eady Levy, a levy on cinema tickets to finance British-based production. Protecting culture was also an important reason for the various tax breaks since the 1970s.

Remedying market failure was also important. The Cinematograph Act (1909), for example, led to an investment boom, as it made insuring cinemas easier and increased confidence of investors by reducing information asymmetry (Miskell 2005). The 1927 quota act also countered market failure. Hollywood studios dominated British screens. In 1948 the existence of collusion was corroborated by the US Supreme Court, which found the

Hollywood studios guilty of collusion and asked them to divest their cinemas and abolish some business practices. The U.S. Webb-Pomerene Act, however, still allowed American firms to collude in foreign markets by forming export cartels.

In exhibition, British policy to remedy market failure seems to have been decidedly unsuccessful. In the 1980s, for example, the Monopoly and Mergers Commission concluded that competition was lacking in film exhibition, but that nothing could be done. Yet a few years later foreign new entrants, such as the French UGC and the American Warner Cinemas and MGM Cinemas, engaged the incumbents with new multiplex cinemas (Bakker 2010a).

Another policy objective, protecting the balance of payments, became important in the 1940s. Britain had a substantial dollar 'shortage', and the Bank of England put strict limits on what Hollywood studios could remit back to the United States. Remittances grew from £7 million and £10 million in unregulated 1938 and 1939 to between £4.8 and £8.5 million annually in 1940-1943, under restrictive regulation. In 1943, when regulation was lifted, the remittances ballooned to £26.5 million, and between 1944 and 1946 they were between £15 and £17 million per annum, around 4 % of all dollar imports (*Annual abstract of Statistics*, various years; Dickinson and Street 1985:179; Dickinson 1983: 76; Tunstall 1983:63). In 1947, the Treasury taxed remittances at 75 %, which led to a Hollywood boycott. In the end the controls were lifted, and Hollywood started producing a substantial number of films in Britain (Tunstall 1983: 63-67). Classics such as *Bridge on the River Kwai* and *Lawrence of Arabia* were supported by the Film Finance Corporation, founded

in 1949, and partially meant to protect the balance of payments by encouraging American firms to produce in Britain. Since at least the 1960s, when data becomes available, Britain has been a net exporter of films every single year.

Agglomeration benefits were another policy objective. The idea was to protect an industry until it reached a critical mass and would benefit from Marshallian external economies of scale, knowledge spill-overs and labour market pooling. The 1927 quota act was meant to create a self-sustaining agglomeration of British film companies, viable when the Act expired. Many new companies were founded, and many Hollywood studios opened British production subsidiaries (Bakker 2010b). Yet the Act had to be renewed when it expired, and quotas remained in place until 1983. Almost all policy tools probably included some intended stimulation of agglomeration benefits. The tax breaks since the 1970s were certainly intended to achieve a critical mass of film production. General cultural policies such as training, film schools, universities, the founding of the British Film Institute, of course helped as well.

Another policy objective was trade promotion and propaganda. During the drafting of the 1927 Act, the promotion of British goods and services was specifically mentioned, and it was widely felt that films would help British industry. As *The Economist*, wrote in 1937: "Trade follows the film." British cultural exports may also have added 'soft power' to Britain's international strategy and its efforts to assemble and retain allies.¹¹

¹¹ See the discussion on soft power in the previous section.

6.2 Why direct intervention in film but not in recorded music?

In contrast to film, the British music industry experienced little intervention.

Five economic reasons can explain why it was better able to withstand foreign competition, and three historical reasons why it was more difficult to organise public support for intervention in the recorded music industry.

In economic terms, first, consumer preferences in music were more horizontal than vertical, meaning that a few songs could not steal away sales of all other songs. Second, while doubling a film budget easily increased perceived quality, doubling the budget for a song would not necessarily have the same effect. Third, entry costs in music production decreased: from the 1980s almost anybody could produce a record from their home. Fourth, entry in music distribution was far easier than entry into film distribution, and fifth, music preferences were more local than film preferences: many American songs were not directly imported, but used as inputs for British cover versions (Tennent and Gourvish 2010).

Historically, first, British film production almost ceased in mid-1920s, giving powerful support for protection. The British recorded music industry never experienced such a fate. Second, between the 1930s and the 1960s EMI dominated music production and distribution with a 50-80 % market share and huge royalty imports, causing less balance of payment problems than film, and the forced sale of Decca's US assets brought in a substantial amount of dollars. Third, radio became an important way to distribute music, and was controlled by the BBC monopoly, probably making intervention more difficult.

7. Conclusion

We have investigated three questions: how new media industries arose and old industries changed in Britain since 1870, which tendencies drove their evolution, and what impact they had on the rest of the economy. First, we have shown how the emergence of new media industries in Britain can be seen as a series of industrialisations that automated and standardised entertainment and made it more easily tradeable, how this improved productivity, and how the latter enabled Britain to capitalise on its comparative advantage in entertainment.

Second, we showed how four economic tendencies shaped the evolution of each of the media industries. The importance of endogenous sunk costs triggered quality races, which hampered the British film industry during the 1920s and since the 1970s, but helped its music industry since the mid-1950s. Marginal revenues equalling marginal profits induced vertical integration, leading to a dominance of vertically integrated companies in several British media industries, such as J. Arthur Rank in the film industry, EMI in the music industry, and the BBC in public broadcasting. Quasi-public good characteristics, media being a toll good, led to exclusion-focused business models and the prospering of superstars, helping to understand commercial television's reliance on advertising before cable, and the importance of stadium-sized live events for superstars' income. Finally, the project-based nature of media production stimulated agglomeration in several industries. Books, magazine, and newspaper publishing and news agencies had traditionally been centred in London, and the film, television, recorded music and surviving live entertainment industries have located there as well.

Videogame development, however, became more widespread throughout Britain.

Third, we showed how the media industries had a far larger impact on the British economy than their GDP-share would suggest. Because of the opportunity costs they involved, they increased total welfare by far more than prices would suggest - in one example, films, about twice as much. More effective information transmission and conditioning of morals that lowered transaction costs improved the functioning of markets at the cross-sections. Advertising and communication had important longitudinal effects on market functioning. The former, by allowing increases in concentration, the latter by facilitating collective action and institutional change that could change the way the market functioned. Media also affected human capital formation, through their role in education, as well as consumers' expectations and aspirations.

We have seen how policy intervention modulated the effects of the unstoppable forces of industrialisation. In film and television intervention was the strongest, in music, publishing and videogames substantially lower. One could speculate whether policy that would have been friendlier towards new media would have allowed Britain to capitalise better on its distinctive capabilities in entertainment. Without a cinema-biased entertainment tax, without the forced divestment of Decca's foreign assets, without a monopoly in public broadcasting, British media industries might have done slightly better. General policies might also have helped: had competition policy remedied the situation in cinemas, the film market might have been larger with better screen-access for independent films; had education policy been more proactive the workforce might have been better educated; and had backward

industrial practices been abolished more quickly the industry might have been more effective. A pessimist might comment that this case once again demonstrates that the reasons for Britain's over-all underperformance compared to the United States and Europe lay not in what it did in its long-existing industries, but in the inability of its economy - through deficient competition policy, backward industrial practices and under-education – to switch resources more rapidly and effectively to sectors in which it did have a strong comparative advantage.

Bibliography

- Atwood, M. 2012. *In other worlds: SF and the human imagination*. New York.
- Bakker, Gerben. 2001. Stars and Stories: How Films Became Branded Products. *Enterprise and Society* 2: 461-502.
- Bakker, Gerben. 2003. Building Knowledge about the Consumer: The Emergence of Market Research in the Motion Picture Industry. *Business History* 45:101-127.
- Bakker, Gerben. 2004. Selling French films on Foreign Markets: The International Strategy of a Medium-Sized Company. *Enterprise and Society* 5:45-76.
- Bakker, Gerben. 2005. The Decline and Fall of the European Film Industry: Sunk Costs, Market Size and Market Structure, 1895-1926. *Economic History Review* 58:310-351.
- Bakker, Gerben. 2006. The Making of A Music Multinational: Polygram's International Businesses, 1945-1998. *Business History Review* 80:81-123.
- Bakker, Gerben. 2007. The Evolution of Entertainment Consumption and the Emergence of Cinema, 1890-1940. *Advances in Austrian Economics* 10: 93-138.
- Bakker, Gerben. 2008. *Entertainment industrialised: The Emergence of the international film industry, 1890-1940*. Cambridge.
- Bakker, Gerben. 2009. Time and Productivity Growth in Services: How Motion Pictures Industrialized Entertainment. *Working Papers in Economic History*, No. 119, Department of Economic History, London School of Economics.
- Bakker, Gerben. 2010a. The Evolution of the British Entertainment Business: Film, Music and Videogames. Learning From Some of Britain's Successful Sectors: An Historical Analysis of the Role of Government. *UK Government Department of Business, Innovation and Skills, Economic Paper* No. 6.
- Bakker, Gerben. 2010b. 'Firm Strategies, Government Policies and the European Film Market in the Interwar Period: An Economic History Perspective', *Tijdschrift voor Mediageschiedenis*, Vol. 13 No. 2 (2010), 13-36.
- Bakker, Gerben. 2011a. Trading Facts: Arrow's Fundamental Paradox and the Origins of Global News Networks. In Putnis, P., Kaul, C., and Wilke, J. eds., *International Communication and Global News Networks: Historical Perspectives*. New York.
- Bakker, Gerben. 2011b. Adopting the Rights-Based Model: Music Multinationals and Local Music Industries since 1945. *Journal of Popular Music History* 6: 311-49.
- Bakker, Gerben. 2012a. Leisure time, cinema, and the structure of household entertainment expenditure, 1890-1940. In Cameron, S. ed., *Handbook on the Economics of Leisure*. Cheltenham.
- Bakker, Gerben. 2012b. The Quality Race: Feature Films and Market Dominance in the United States and Europe in the 1910s. In Neal, S. ed., *The Classical Hollywood Reader*.
- Bakker, Gerben. 2012c. How Motion Pictures Industrialized Entertainment. *Journal of Economic History* 72: 1036-1063.
- Bakker, Gerben. 2013. 'Money for nothing: how firms have financed R&D-projects since the Industrial Revolution', *Research Policy* 42 (2013), 1793-1814.
- Bakker, Gerben. 2014a. Sunk costs and the evolution of the creative industries. In Jones, C., Lorenzen, M., and Sapsed, J. eds., *The Oxford Handbook of Creative Industries*. Oxford.
- Bakker, Gerben. 2014b. 'How they made news pay: news traders' quest for crisis-resistant business models,' in: S. Schifferes and R. Roberts eds., *Soothsayers of Doom: the media and financial crises* (London, Routledge, 2014, forthcoming).
- Baumol, W. J. and Bowen, W.F. 1966. *Performing Arts: The Economic Dilemma. A Study of Problems Common to Theater, Opera, Music and Dance*. New York.
- Baumol, W. J. 1967. Macroeconomics of Unbalanced Growth. The Anatomy of Urban Crisis. *American Economic Review* 57: 415-426.
- Becker, G.S. 1965. A theory of the allocation of time. *Economic Journal* 75:493-517.
- Bhattacharya, U., N. Galpin, R. Ray and X. Yu, "The Role of the Media in the Internet IPO Bubble," *Journal of Financial and Quantitative Analysis*, Vol. 44, No. 3, June 2009, pp. 657-682.
- Bhattacharya, Utpal, Neal Galpin, Rina Ray and Xiaoyun Yu, "The Role of the Media in the Internet IPO Bubble," *Journal of Financial and Quantitative Analysis*, Vol. 44, No. 3, June 2009, pp. 657-682.
- Briggs, A. 1961-95. *The history of broadcasting in the United Kingdom, Vols. 1 – 5*. Oxford.
- Briggs, Asa, "Mass Entertainment. The origins of a modern industry," the 29th Joseph Fisher Lecture in Commerce, delivered at the University of Adelaide, 19 October 1960 (University of Adelaide, 1960). Reprinted in: *The collected essays of Asa Briggs, Volume III. Serious*

- pursuits. Communications and education* (Hemel Hempstead, Harvester Wheatsheaf, 1991), 38-61.
- Campbell, G., J. D. Turner and C. B. Walker, "The role of media in a bubble," *Explorations in Economic History*, Vol. 49 (2012), pp. 461-481.
- Carnevali, Francesca, and Lucy Newton, 'Pianos for the People: From Producer to Consumer in Britain, 1851–1914,' in *Enterprise & Society*, Vol. 14 (2013) pp. 37-70.
- Census of Population, England and Wales, 1931, 1951*
- Chamberlin, E. 1933. *The theory of monopolistic competition*. Cambridge, Mass.
- Crafts, N. 1989. Revealed Comparative Advantage in Manufacturing, 1899-1950. *Journal of European Economic History* 18: 127-37.
- Crowhurst, A. 1991. The Music Hall, 1885-1922. The Emergence of A National Entertainment Industry in Britain. University of Cambridge, PhD thesis.
- Dahl, G., and S. Dellavigna, 'Does Movie Violence Increase Violent Crime?' *Quarterly Journal of Economics* 124 (2009), 677-734.
- Davis, T.C. 1990. The theatrical employees of Victorian Britain. Demography of an industry. *Nineteenth Century Theatre* 18:5-34.
- Davis, T.C. 2000. *The economics of the British stage, 1800-1914*. Cambridge.
- Dickinson, M. and Street, S. *Cinema and state. The film industry and the British government, 1927-1984*.
- Dickinson, Margaret, 'The state and the consolidation of monopoly' in. James Curran and Vincent Porter eds., *British Cinema History* (London, Weidenfeld and Nicholson, 1983), pp. 74-98.
- Dittmar, J. E., "Information technology and economic change: The impact of the printing press," *Quarterly Journal of Economics* 126 (2011), 1133–1172.
- Ehrlich, Cyril, *The piano. A history* (Oxford, Oxford University Press, orig. 1976, rev. ed., 1990).
- Engelberg, J. E. and C. A. Parsons, "The Causal Impact of Media in Financial Markets," *Journal of Finance*, Vol. 66 No. 1 (February 2011), pp. 67-97.
- Evans, R. J. W. 2012 The gambler in blood and iron, *New York Review of Books*, 23 February:39-41.
- Feather, J. 2006. *A history of British publishing*.
- Feinstein, C. 1990. New estimates of average earnings in the United Kingdom, 1880-1913. *Economic History Review* 43:595-632.
- Feinstein, C. 1990. What really happened to real wages? *Economic History Review* 43:329-355.
- Fletcher, W. 2008. *Powers of persuasion: the inside story of British advertising, 1951-2000*. Oxford.
- Frazzetto, G. 2012. Powerful Acts. *Nature* 482:466-7.
- Garcia, D., "Sentiment during recessions," *Journal of Finance*, Vol. 68 No. 3 (June 2013), pp. 1267-1300.
- Goolsbee, A. and Klenow, P.J. 2006. Valuing consumer products by the time spent using them: an application to the internet. *NBER Working Paper* 11,995.
- Gourvish, T. and Tennent, K. 2010. Peterson and Berger revisited: Changing market dominance in the British popular music industry, c.1950-80. *Business History* 52:187-206.
- Henry, B. ed. 1986. *British television advertising: the first 30 years*.
- Jacobs, J. 1970. *The economy of cities*. New York.
- House of Lords, Select Committee on Communications, The British film and television industries—decline or opportunity?, 1st Report of Session 2009-10 (London, The Stationary Office Ltd., 2010).
- Jones, G. 1985. The Gramophone Company: An Anglo-American Multinational, 1898-1931. *Business History Review* 59:76-100.
- Jowett, G.S. 1974. The First Motion Picture Audiences. *Journal of Popular Film* 3:39-45.
- Kaldor, Nicholas and Rodney Silverman, *A statistical analysis of advertising expenditure and of the revenue of the press* (Cambridge, Cambridge University Press, 1948).
- Kaukiainen, Y., 'Shrinking the world: Improvements in the speed of information transmission, c. 1820-1870', *European Review of Economic History* 5 (2001), 1-28.
- Layard, R. 2011. *Happiness: lessons from a new science*.
- Levi, L. et al. 1882. Reports to the British Association. In *Report of the fifty-first meeting of the British Association for the advancement of science held at Southport, 1882*. Southport.
- Low, R. 1948-79. *The history of the British film, Vol. 1 – 7*.
- Maddison, A. 1995., *Monitoring the world economy, 1820-1992*. Paris.
- Matthews, R.C.O., Feinstein, C.H. and Odling-Smee, J.C. 1982. *British economic growth, 1856-1973*. Oxford.
- McAleer, J. 1992. *Popular reading and publishing in Britain, 1914-1950*. Oxford.

- McCloskey, D.N. 2012. Happyism: The Creepy New Economics of Pleasure. *The New Republic*, Vol. 243: no.10,16-23.
- Mezias, J. and Mezias, S. 2000. Resource partitioning, the founding of specialist firms and innovation. The American feature film industry, 1912-1992. *Organization Science* 11:306-322.
- Miskell, P. 2005. Seduced by the Silver Screen: Film Addicts, Critics and Cinema Regulation in Britain in the 1930s and 1940s. *Business History* 47:433-448.
- Miskell, P. 2006. *A Social History of the Cinema in Wales, 1918-1951: Pulpits, Coal Pits And Flea Pits*. Cardiff.
- Mitchell, B. R. 1988. *British Historical Statistics*. Cambridge.
- Monopolies and Mergers Commission. *Videogames: A report on the supply of videogames in the UK* (March 1995, Cm 2781).
- National Institute of Economic and Social Research, *Statistics of advertising : a report based upon the investigation carried out on the initiative of the Advertising Association* (London, National Institute of Economic and Social Research, 1946).
- Nevett, T. R. 1982. *Advertising in Britain: a history*.
- Noam, E., *Media ownership and concentration in America* (New York, Oxford University Press, 2009).
- North, D. and Davis, L. 1971. *Institutions and American Economic Growth*. Cambridge.
- Nye Jr., J. S., *Soft Power: The means to success in world politics* (New York, Public Affairs, 2004).
- Nye Jr., J. S., *The future of power* (New York, Public Affairs, 2011).
- Officer, L.H., 2013. What Was the U.K. GDP Then?
MeasuringWorth, <http://www.measuringworth.com/ukgdp/>
- Ostrom, E., "Beyond markets and states: polycentric governance of complex economic systems," *American Economic Review* 100 (2010), 641-672.
- Pinker, S. 2011. *The better angels of our nature: why violence has declined*. New York.
- Prest, A.R. 1954. *Consumer expenditure in the United Kingdom, 1900-1919*. Cambridge.
- Robinson, Joan, *The economics of imperfect competition*, MacMillan, London 2nd ed. 1969 [1933].
- Sanderson, M. 1984. *From Irving to Olivier. A social history of the acting profession in England, 1890-1980*.
- Sedgwick, J. 1994, The Market For Feature Films In Britain, 1934. A Viable National Cinema. *Historical Journal of film, radio and television* 14:15-36.
- Sedgwick, J. 1997. The British Film Industry Production Sector Difficulties In The Late 1930s. *Historical Journal of film, radio and television* 17:49-66.
- Sedgwick, J. 2000. *Popular film in 1930s Britain. A choice of pleasures*. Exeter.
- Sedgwick, J. and Pokorny, M. 2005. The film business in Britain and the United States during the 1930s. *Economic History Review* 57:79-112.
- Sen, Amartya, *Development as freedom* (Oxford, Oxford University Pres, 1999)
- Shiller, R. J., *Irrational exuberance* (New York, Broadway Books, revised version of the Second Edition, 2009).
- Silberstein-Loeb, J. 2009. The structure of the news market in Britain, 1870-1914. *Business History Review* 83:759-788.
- Soros, G. 2000. *Open Society: The Crisis of Global Capitalism Reconsidered*. New York.
- Steinberg, J. 2011 *Bismarck: A life* Oxford.
- Stokes, J. and Reading, A. 1999. *The Media in Britain: Current Debates and Developments*. Basingstoke.
- Stone, R. ed. 1966. *The measurement of consumer expenditure and behaviour in the United Kingdom, 1920-1938, Volume II*.
- Sutton, J. 1991., *Sunk costs and market structure. Price competition, advertising and the evolution of concentration*. Cambridge, Mass.
- Sutton, John, *Technology and market structure. Theory and history* (Cambridge Mass., MIT Press, 1998).
- Taylor, A. J. P. 1976, *English history, 1914-1945* Oxford.
- Temin, Peter, "Two Views of the British Industrial Revolution," *Journal of Economic History*, Vol. 57, No. 1 (Mar., 1997), pp. 63-82.
- Tetlock, P. C., "Giving content to investor sentiment: the role of media in the stock market," *Journal of Finance*, Vol. 62 (2007), pp. 1139-1168.
- Tunstall, J. 1983. *The media in Britain*.
- U.S. Commissioner of Labor Survey. 1889/1890. Survey of earnings and expenditure of households in UK, Belgium, France, Germany and Switzerland.
- Weedon, A. 2003. *Victorian publishing: the economics of book publishing for a mass market, 1836-1916*. Aldershot.