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ABSTRACT

By 1900, local authorities had succeeded companies and voluntary organisations as the major providers of utilities, schools and hospitals. This article examines why the role of companies and voluntary organisations diminished. It does this by comparing the financial results of companies, voluntary organisations and local authorities to identify the differing objectives they pursued. The results show that the priority for companies was short term dividend payments, while voluntary organisations put their charitable objectives first. In contrast, local authorities invested heavily to promote long term growth. Councils also pursued this objective by taking over a significant number of utility companies and voluntary schools.

KEYWORDS

Nineteenth-century England; infrastructure investment; utility companies; voluntary organisations; local authorities

1. Introduction

In the early nineteenth century, companies were responsible for almost all gas and water supply investment in England. At the same time, voluntary and private organisations built and ran nearly all schools and hospitals. By the end of the century, this picture had changed dramatically. Nearly half of the water, gas, electricity and tram investment came from public sector bodies, as did three-quarters of school and hospital investment. What caused this significant shift from private to public provision of utility services, and the reduced role of the voluntary sector in the provision of schools and hospitals? Histories of utility industries say little about the relative decline of company investment in the nineteenth century (Byatt, 1979, pp. 197–209; Hannah, 1979, pp. 22–27). Instead, they concentrate more on the twentieth-century development of national state-owned enterprises. The literature on local authority utilities argues that councils sought to earn profits from their utility undertakings (Falkus, 1977; Millward, 2014, pp. 387–405; Millward & Ward, 1993, pp. 1–21). This view has been repeated by many others (Daunton, 2001, p. 284; Middleton, 1996, p. 208). This article argues for a more convincing explanation of the trend towards public sector provision.

Amatori and Colli (2011, p. 189) note that state-owned enterprises often play a significant role in 'industries considered as essential for a modern economy'. This article treats local authorities

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as state-owned enterprises and the six services as essential for a modern economy. Using the financial results of companies, voluntary organisations and local authorities, it highlights the differences in the objectives of the three sectors. These different objectives are clear from the different balances each sector struck between prices, investment, profit and growth. The article also examines the pressures that discouraged companies and voluntary organisations from investing, and encouraged council investments and takeovers of company utilities.

I concentrate on the four utility services—water, gas, electricity and trams—and on schools and hospitals. There are two important links between these six cases. First, the financial results of large numbers of providers are readily available. Second, by the mid-twentieth century, non-public provision of all six services had virtually ended. The scale of change over the course of the nineteenth century is revealed by calculating capital investment totals for each service. These totals are then split between companies, voluntary organisations, local public sector bodies, and central government. Feinstein undertook the first task but had no need to undertake the second (Feinstein & Pollard, 1988, pp. 302–6, 355–369). I then analyse the financial results of many individual public, private and voluntary providers. From these results it is possible to generate figures for prices, investment, profits and growth in each sector.

I find that there were two main drivers for the shift from private and voluntary to public provision of these six services. First, companies' objectives were focussed on short term profits and dividends, and voluntary organisations on their charitable or religious objectives. These objectives limited their willingness to invest. In contrast, local authority objectives concentrated on growing the number of service users, and this encouraged investment. The second reason was that local authorities took over a significant number of utility companies and voluntary schools. However, a number of factors influenced the behaviour of companies, voluntary bodies and councils. Companies were affected by their fear of tighter regulation, legislation allowing council buyouts, and what they saw as unfair competition from councils. Voluntary bodies' investment was limited by the capital available to them, and their ability to meet the running costs of new schools and hospitals. Local authority investment and takeover activity reflected the pressures on them from the government, from their enlarged electorates, their dissatisfaction with company services, and a wish to create competition. These factors affected each service differently, accounting for the different share of public investment in each of the six services.

This study makes five contributions to business history. First, it shows that treating local authorities as state-owned enterprises allows their behaviour to be analysed and contrasted with that of companies and voluntary organisations. The second contribution is to challenge the common view that councils provided utility services to earn profits for ratepayers. A third contribution is to highlight one of the first large-scale transfers of organisations from the private to the public sector. Unusually, this transition happened at a local, not a national, level. Fourth, I show that the shift to public provision was not inevitable; instead, it reflected the actions of companies, voluntary bodies and local authorities. Finally, the article shows that the challenge of balancing taxpayer and consumer interests in the provision of essential services was recognised in nineteenth century England.

The following section sets out the scale and changing patterns of investment by companies, voluntary organisations and the public sector in the nineteenth century. The third section examines the reasons for the decline in the relative importance of companies, and the fourth does the same for voluntary organisations. The fifth section looks at why local government bodies increased their investment and took over utility companies. The final section draws conclusions.

2. The scale and pattern of infrastructure investment

National fixed capital formation grew 12-fold in real terms between the first and last decades of the nineteenth century (Feinstein & Pollard, 1988, pp. 444–5). Investment in the six services considered here grew even faster. There were perhaps four drivers of investment in utilities, schools and hospitals. Technological change was rapid during the period, accounting for the early growth of the gas industry, and the later development of electricity and trams. The second was the rapid population growth and urbanisation during the century, and the need to cope with the resulting public health issues and rising mortality rates. These pressures drove the growth of investment in water and health. But investment would not have grown in these services without a strong demand for them. This demand led to the explosion in the numbers of new gas, water, electricity, and tram companies established during the nineteenth century. Interest groups and an expanding electorate created a demand for universal elementary education and for better public health. The final spur was the rapid growth in savings to finance investment in these six services.

It was only with Feinstein's pioneering research on capital formation, that we have had good data for the second half of the nineteenth century (Feinstein & Pollard, 1988). But because of the national income focus of his work, he did not need to split the data between private and public sector providers. Creating this division has involved revisiting some of Feinstein's data, identifying new sources of data, and finding ways of checking the results.

In the early part of the nineteenth century, companies and public bodies could only raise capital by promoting a local act of Parliament. These acts were published each year in *Statutes at Large, Personal and Local Acts*. I have examined all of these and listed their borrowing approvals. After the middle of the century, Parliament expected large public bodies like the Corporation of London and the Metropolitan Board of Works to publish their annual accounts, and these appear in parliamentary papers.[1] I have used these annual accounts wherever possible because they include details of actual capital spending. Many public health acts granted general borrowing powers to local public bodies, but each local board or council still needed an individual borrowing approval from a government department. Annual parliamentary papers list these approvals.[2] After 1884, all local government investment appears in the annual local taxation returns.[3] Investments by government inspected voluntary schools are derivable from Committee in Council annual reports in parliamentary papers after 1839.[4] Parliament had an interest in utility investment and published annual returns of investment by gas and tram undertakings.[5] I used a mixture of local act borrowing approvals and Garcke's (1897–1900) industry surveys to calculate private electricity investment. Data for voluntary schools not inspected by government, private schools and voluntary hospitals are only known for a few dates: 1851 and 1897 for schools, and 1861 and 1891 for hospitals (PP. 1852 (1692); PP 1897 (8634); Pinker 1966, p. 92). Feinstein and Pollard (1988, pp. 359–361, 366) estimates for other dates have therefore been used with his estimated building costs.

Table 1 shows the results of this data collection, with the investments in the four utilities split between companies and the public sector. Table 2 show the results for schools and hospitals, split between private, public and voluntary sectors. While around half of the school and hospital totals depend on estimates, only 1% of the utility totals are estimated. There are risks in using estimated pupil or bed numbers and estimated building costs in Table 2. In practice, though, actual school place and hospital bed numbers are known for several

dates, so the risk affects the timing of increases, rather than the totals. Published opening dates for voluntary hospitals have been used to minimise these risks (Taylor, 1991, appendices). Feinstein also noted that he had been able to check the timing of non-church voluntary and private school building against the secondary literature sources (Feinstein & Pollard, 1988, p. 360). Building costs are also known for similar facilities in different sectors, and the risks are therefore small.

There are two further potential risks in the approach used in Tables 1 and 2, but both are also small. First, reliance on capital raising approvals could lead to understating the total by ignoring investment financed out of annual income. However, a series of checks against fixed asset values in balance sheets (English, 1827, p. 38; Fletcher, 1845, p. 172) reveals only one material difference. London water companies in the 1820s and 1830s invested around £1 m in fixed assets out of retained earnings, rather than capital raising, and Table 1 includes this sum. Second, companies or authorities might not have used some capital raising approvals, leading to an overstated investment total. Checking capital raising powers against fixed asset values has revealed no material unused approvals. For local authorities, all the evidence suggests that they preferred to borrow to finance capital.[6] A high degree of confidence can therefore be placed in Tables 1 and 2.

Table 1 shows the pattern of investment in the four utilities. In all four cases, private companies were the sole early providers, but over time their share of investment fell. Local authorities only became gas and water suppliers after three decades of private sector dominance. In the last decade of the century, companies provided 36% of water investment, and 71% of gas investment. The differences between the public shares of water and gas are important. Later sections will show high levels of council dissatisfaction with water company services and pressure for water supply to all households. For gas, the pressure for change was markedly less, so private companies remained significant suppliers until nationalisation in 1949. Tram and electricity investment in the 1890s is roughly evenly split between companies and local authorities. Later sections will also show that both tram and electricity companies were subject to many takeovers by councils, and this contributed to the rapid fall in the company share of investment.

Table 2 shows the pattern of investment for schools and hospitals. The state only became involved in school provision in the 1830s, when central government began offering capital grants to encourage the Church of England to build schools. Schools judged 'efficient' by government inspectors could also get government grants to offset running costs. The government judged many other voluntary and private schools 'inefficient', and they could not receive grants. By the 1860s, around 80% of school investment came from the voluntary and private sectors. The 1870 Elementary Education Act created public sector school boards which were intended to 'fill in the gaps' in school provision.[7] After 1870, investment by these school boards boomed, while investment in voluntary schools shrank after 1880. The result was that by the 1890s, the voluntary and private sector's contribution to school investment had fallen to below 30% of the total.

Table 2 shows a steady increase in public sector investment in hospitals in the second half of the century. This trend started in the 1840s, when local authorities began to build lunatic asylums. Before then, almost all hospitals were provided by the voluntary sector. Public provision increased further in the 1860s, when poor law unions began to build workhouse infirmaries to treat paupers (Pinker, 1966, pp. 91–2). The public sector began to build fever hospitals in the 1870s in response to repeated epidemics of infectious diseases (Ayres,

Table 1. The rising public sector share of investment in utilities.

	Water			Gas			Trams			Electricity		
	Public	Private		Public	Private		Public	Private		Public	Private	
	£000	£000	Public share	£000	£000	Public share	£000	£000	Public share	£000	£000	Public share
1800s	2	560	0%									
1810s	8	960	1%		933	0%						
1820s	58	1,695	3%	6	2,694	0%						
1830s	338	921	27%		812	0%						
1840s	1,278	3,606	26%		3,182	0%						
1850s	4,375	7,418	37%	1,049	5,330	16%						
1860s	6,717	11,801	36%	1,063	9,587	10%		501	0%			
1870s	18,900	8,411	69%	8,554	11,246	43%	1,297	2,192	37%			
1880s	16,914	6,370	73%	3,769	9,223	29%	848	6,667	12%	36	1,027	3%
1890s	19,329	10,948	64%	7,051	17,215	29%	5,390	4,895	52%	8,885	10,227	46%

Sources: All public sector investment after 1884 from annual Local Tax Returns in parliamentary papers. Pre-1884 water and gas public investment, and private investment in water, trams and gas from borrowing approvals in Local Acts of Parliament recorded in annual *Statutes at Large* volumes. Additional borrowing approvals for public water and gas investment using 1848 Public Health Act powers from annual parliamentary reports. Private tram and post 1884 gas investments from annual parliamentary reports. Private electricity investments based on Garcke, *Manual of Electricity Undertakings* 1899.

Table 2. The rising public sector share of investment in schools and hospitals.

	Schools						Hospitals					
	Public sector		Voluntary sector				Public sector					
	Board schools	Government grants	'Efficient' schools	Other vol. schools	Private schools	Public share	Fever hospitals	Asylums	Military hospitals	Poor Law infirmaries	Voluntary hospitals	Public share
	£000	£000	£000	£000	£000		£000	£000	£000	£000	£000	
1800s			101	18	18	0%	54		91		85	63%
1810s			206	38	44	0%	104		104		146	59%
1820s			246	44	89	0%	5		35		372	10%
1830s		129	470	104	178	15%	4	10		5	516	4%
1840s		257	713	197	673	14%		545		50	703	46%
1850s		712	1,400	295	296	26%		1,055		62	651	63%
1860s		449	1,263	295	591	17%	30	1,018		382	2,211	39%
1870s	11,042	1,108	7,536	2,863	3,114	47%	509	1,802		1,308	939	79%
1880s	10,664	1,115	4,091	1,891	2,915	57%	957	2,439		750	198	95%
1890s	17,510	1,181	1,863	2,340	3,371	71%	3,634	5,364		2,244	2,038	85%

Notes: 'Board schools' are run by local school boards which later were absorbed into local authorities. 'Government grants' cover capital building grants to efficient voluntary schools, and capital building grants to teacher training establishments, mostly run by churches. 'Other voluntary schools' are those not recognised by central government as efficient, and not able to receive capital or running cost grants. 'Private schools' are those run for profit. 'Poor law infirmaries' cover capital costs of providing sick wards or infirmaries in workhouses for the treatment of individuals. Other workhouse building costs are excluded.

Sources: Board schools pre-1884, government grants from annual reports of Committee of Council, in parliamentary papers each year. 'Efficient' voluntary schools based on place numbers in the same annual reports and estimated building costs per pupil. Board school costs post-1884 from annual local taxation returns in parliamentary papers. 'Other voluntary' and private schools' based on pupil numbers in PP 1852 (1692) and 1897 (8634) and estimated building costs per pupil. Pre-1884 fever hospitals and asylum costs from local acts granting borrowing powers, in annual *Statutes at Large*. Post-1884, these costs from annual local taxation returns in parliamentary papers. Poor law infirmary costs from Poor Law Commission registers at the National Archives. Military hospital costs from annual civil service estimates in parliamentary papers. Voluntary hospital costs are based on hospital bed numbers for 1861 and 1891 in Pinker, *English hospital statistics*, and Feinstein's cost per bed estimates in *Capital formation*.

1971, p. 49). After 1870, there was also a second wave of lunatic asylum building by local authorities and the Metropolitan Asylum Board (Ayres, 1971, p. 43). In contrast, voluntary sector investment was more volatile, and confined to general and teaching hospitals. By the 1880s and 1890s, the public sector was providing around 90% of hospital investment.

3. Why did companies become less important?

This section examines why companies became less important as utility providers. First it contrasts the objectives of companies and local authorities by comparing their investment, pricing, profit and growth records. It then considers a range of pressures that discouraged company investment. These include the potential lack of profit in utility supply in some areas, the impact on utility companies of government regulation and legislation, and of council competition. The section ends by looking at the significant number of local authority takeovers of private utility companies.

Wilson (1991, p. 84) suggests that early gas companies were formed to light the factories of their founders. He argues that gas company objectives were 'strategic' because the financial benefits accrued to the factory owners, not the gas companies. Williams (1876, pp. 8–9) saw the objectives of the early Midland Railway Company in the same way. In the next stage of a company's development, it had 'speculative' objectives, with investors hoping for large capital gains (Freeman et al., 2012, p. 110). Wilson (1991, p. 82) notes that in the early speculative stage, investment levels and capital gains could be high, but dividends low. Pollard (1989, p. 48) comments on the speculative nature of the early electricity industry by saying that nearly all early investors lost their money. Speculative investors were in turn succeeded by rentiers, who focussed on dividends rather than capital gains (Acheson et al., 2017, pp. 615, 620). This is consistent with Chandler's (1977, p. 10) view that shareholders preferred to see profits distributed as dividends. Johnson (2010, p. 201) argues that in the late nineteenth century, 'shares in the larger publicly traded companies … were more usually viewed as financial instruments that produced a dividend income'. Using principal-agent terminology, I argue that utility shareholders acted as rentiers or principals, focussing on short-term profits and dividends. The managers of utility companies were less influential than shareholders, and could not insist on Chandler's (1977, p. 10) 'long-term stability and growth'.

It is possible to test this view of utility company objectives by examining their financial results and comparing them to local authority utility undertakings. The comparison concentrates on private and public prices, investment levels, return on capital and growth. Using a return on capital measure avoids the difficulties created by the different capital structures of private and public undertakings. Campbell et al. (2019, Table 8, panel B) show the dividend yield on utility shares averaged around 5% between 1860 and 1900. At the same time, most PWLB lending to local authorities for utility purposes was also at 5%. Companies and local authorities should both have been amortising capital assets over their lives. Companies should have done this by including depreciation in their revenue costs, while local authorities should have achieved the same goal by including loan repayments in their revenue cost. Using different methods of providing capital does not therefore distort the comparisons between companies and local authorities.

Table 3 shows that without exception, companies' prices were higher, capital investment was lower, the return on capital was higher, and growth was lower than for local authority undertakings. Nor are the differences trivial: company prices were on average 17% higher;

Table 3. Financial comparisons of company and public utility undertakings.

Panel A: Water, 1882				
	Price per unit sold	Capex/unit sold	Return on capital	Consumption growth
(1)	d.	£	(2)	p.a. (3)
Companies (19)	7.4	278	7.2%	4.6%
Local authorities (58)	5.9	443	3.9%	12.3%
Panel B: Gas, 1877–99				
	Price per unit sold	Capex/unit sold	Return on capital	Consumption growth
(1)	d.	£	(2)	p.a. (3)
Companies (450)	44	21.5	7.5%	3.5%
Local authorities (232)	39	25.0	6.3%	5.3%
Panel C: Electricity, 1896–99				
	Price per unit sold	Capex/unit sold	Return on capital	Consumption growth
(1)	d.	£000	(2)	p.a. (3)
Companies (42)	6.2	31	6.1%	29%
Local authorities (56)	5.0	55	6.0%	71%
Panel D: Trams, 1896–99				
	Price per unit sold	Capex/unit sold (4)	Return on capital	Consumption growth
(1)	d.	£000	(2)	p.a. (3) (4)
Companies (84)	1.3	−0.6	8.2%	−3.8%
Local authorities (45)	1.2	13.4	3.8%	105%

Notes: 1) Figures in brackets are the number of undertakings in 1899. 2) Return on capital employed is income minus working expenses, divided by capital employed. 3) Consumption growth p.a.: water 11 years from 1883, gas 13 years from 1887, trams 10 years from 1890, electricity 4 years from 1895. 4) Negative figures for tram companies reflect the disinvestments by companies as operations were transferred to the public sector. capex/unit sold = capital expenditure divided by number of units sold.

Sources: A. Silverthorne, *London and provincial water supplies*, 1884 and W. Hastings, *Water works statistics, 1881–93. Gas undertakings*, PP 1900 (143 and 144). Garcke, *Manual of electricity undertakings*, vols. 1–4, 1896, 1897, 1898, 1899. *Tram undertakings*, PP 1900 (315), 1899 (327), 1898 (355), 1897 (375).

and capital spending was 50% lower. These led to company annual returns on capital 2.2 percentage points higher, and annual growth half that in council undertakings. Again, gas and water show differences of degree on all four measures. The larger differences for water prices, investment, returns and growth, reflect the larger role of the public sector. In contrast, gas shows smaller differences, and therefore lower incentives for councils to set up gas undertakings. The comparison for trams shows wide differences on all measures except prices, where the difference is minor. The contraction in passenger numbers and near net zero capital investment reflect the number of companies taken over by local councils. The electricity comparison shows almost identical returns on capital, but wide differences in prices, investment, and growth. This may in part reflect the relative youth of many council electricity undertakings. Despite these differences of degree, the overall pattern is similar: company objectives put a higher priority on returns on capital, while local authorities' highest priority was growth.

These differences in objectives were the major reason for the relative decline in private investment in utilities, but there were other factors which may also have had an impact. Table 3 data shows that local authority water undertakings were loss making because their return on capital was less than their cost of capital. This suggests that profit seeking companies would be unlikely to invest in these locations. Without a non-profit seeking alternative supplier, this approach could leave many areas without a water supply. A modern economist could see this as a market failure in an essential service which would invite government action. Here it is seen as a potential explanation of the lack of willingness of private water companies to invest in some locations. Table 3 data for trams suggests a similar problem,

but on a smaller scale. The market failure explanation has less relevance for gas and electricity because councils' returns were above their costs of capital.

Government regulation of dividends may also have discouraged companies from investing. Modern economic theory sees a need to regulate many businesses to compensate for either a natural monopoly, a market failure or costs that fall on wider society. For the gas industry in nineteenth century England, the government recognised the dangers of monopolies, and sought to limit dividends in 1847 and (London only) prices in 1860.[8] However, gas price regulation was difficult because unit prices were falling with technological improvements. Legislating for dividend caps had limited impact because the cap was set at 10%, and because the cap could be avoided with capital reconstructions (Everard, 1992, p. 184). Matthews (1986, p. 245) is right to argue that the regulation of gas companies had little impact in the nineteenth century. Regulation of the gas industry was the best developed in this period, largely because the gas industry was highly profitable, generating large dividends. It was also much larger than the newer and smaller electricity and tram industries. The 1847 Water Clauses Act set similar limits to water company dividends, but with no more benefits for the consumer than in the case of gas.

Government legislation also created pressure on utility company investment levels. Many utility companies felt that giving local authorities the right to buyout a local utility company threatened future company returns on investment. For the government and Parliament, these buy out provisions were a response to the monopolies enjoyed by utility companies, and a substitute for competition between suppliers. Legislative provision for council buyouts of utility companies dates from as early as 1837. When Parliament was considering a local act for a gas company in Leeds, they inserted a clause in the bill allowing Leeds corporation to buy out the company after 12 years (Barber, 1980, p. 316). In 1845, the Royal Commission on Large Towns suggested the 'Leeds clause' ought to appear in all local gas acts, but the government rejected that view (Falkus, 1977, p. 143; Clifford, 1885, p. 253). The 'Leeds clause' approach appeared in both the 1870 Tramways Act and the 1882 Electricity Act, albeit only exercisable 21 years after company formation. Parliament inserted the clause into the Tramways Act to counter local authority objections to the bill (Armstrong, 2012, p. 236). And a Select Committee recommended adding a similar clause to the Electricity Act (Hannah, 1979, p. 5). The legislative buyout threat did not exist in the water and gas industries.

Utility companies also felt under threat from what they saw as unfair competition from local authority utility undertakings. These concerns fill the evidence given by witnesses to the 1900 and 1902 Select Committees into municipal trading (Select Committees, 1900 and 1902). Companies' claimed that: councils had access to cheap capital; and the legally unlimited backing of ratepayers; authorities were less efficient managers of these undertakings; and had no business running utility undertakings. The evidence of increasing local authority involvement in utility provision must have made the threats seem even greater. The Select Committees did not respond to these fears, and confined their eventual recommendations largely to the auditing of local councils. These four pressures might have had an impact on companies' willingness to invest, but they did not have an impact on the profitability of companies. Indeed, after 1850, Campbell et al. (2019–01, Table 8, panel C), show that utility companies earned better returns for investors than the market as a whole.

These four pressures may though have turned into fears about the future, and contributed to shareholders agreeing to local authority takeovers of their companies. By 1900, local authorities had taken over 44% of water companies, and between 15 and 20% of gas, electricity and tram companies.[9] Silverthorne (1881, pp. 16–23, 74–6) published details of the

terms of local authority takeovers of 15 water companies and 37 gas companies, all between 1868 and 1880. Usually, company shareholders were guaranteed payments of between 20 and 25 years of the maximum permissible dividend. In effect, local authorities were paying an average 70% premium on the asset value of the undertakings.[10] Most agreements allowed payments to shareholders to be spread over 20 to 25 years, secured against future rate income. Utility company shareholders were therefore able to cash out on good terms. Indeed, Matthews (1986, p. 261) notes that London gas companies 'maintained that they had no objection to being bought out at a "fair price"'. These takeovers by councils provide a second explanation of the shifting balance of investment from the private to the public sector. These takeovers also confirm company shareholders' preference for short term returns. Even so, there was nothing inevitable about utility companies' falling market share. They could have adopted longer term objectives by investing more to retain market share.

4. Why did investment by voluntary organisations become less important?

What were voluntary organisations' objectives in building and running schools and hospitals? The Church of England was the largest voluntary organisation building schools, and its first two objectives were: 'a Church of England school in every parish'; and to 'provide education for the poor' (Louden, 2012, pp. 1, 8–9). Their third objective was broader: to reverse the trend that 'a growing number of people had no connection with the church'. With minor variations, the objectives for Roman Catholic schools were similar. Unlike Church schools, voluntary hospitals were not religious bodies. Instead, the older hospitals either had an endowment from a rich benefactor, or were 'collecting charities' set up by wealthy social elites (Abel-Smith, 1964, p. 5; Waddington, 2000, p. 8). These voluntary hospitals provided care to the 'deserving poor'. Later, the large voluntary teaching hospitals developed extra objectives around teaching and research (Abel-Smith, 1964, p. 16). Unlike companies, voluntary schools and hospitals were not run for profit. But like companies, they needed clear objectives, access to enough capital to build schools and hospitals, and enough income to survive. Their objectives and finances can therefore be compared with those of local authorities.

As with utility companies, the finances of voluntary schools and hospitals reveal why they had declined in importance by the end of the century. Table 4 compares the income and investments of the local authority board schools with those of the voluntary Church schools over the last 25 years of the century (Board of Education, 1900, vol III, p. 130). It is

Table 4. Income and capital spending of voluntary and public sector schools.

	Annual income per pupil		Annual capital investment per pupil	
	Voluntary schools £	Board schools £	Voluntary schools £	Board schools £
1875–9	3.32	4.20	0.19	0.57
1880–4	3.43	4.18	0.08	0.45
1885–9	3.55	4.49	0.11	0.36
1890–4	3.45	4.53	0.05	0.52
1895–9	3.44	4.75	0.02	0.81

Notes: 'Voluntary schools' includes only those judged 'efficient' by the government. That is, those run by the Church of England, the Roman Catholic Church, Wesleyans, and the British Foreign Schools Society.

Sources: Board of Education Annual Report 1899–1900 PP 1900 (330) Vol. III, p. 130. Capital investment from Table 2, using pupil numbers from 1899.

clear the voluntary schools were financially worse off than board schools, with income per pupil 22% lower, and capital spending per pupil a sixth of the level in board schools. By the 1890s, these funding gaps were growing as the pressure to achieve higher standards pushed costs up, and donations tailed off. As Cruickshank (1963, p. 67) comments, 'many (voluntary) schools had been crushed out of existence. Others had completely exhausted their credit'. These difficulties led to a significant number of school transfers from the voluntary to the public sector. A history of the London Schools Board notes that by 1899, 155 voluntary schools had been transferred to the LSB, mostly for financial reasons (Spalding, 2012 [1900], p. 59). By the end of the century, the British Foreign Schools Society felt the school boards were delivering the BFSS's objectives (Cruickshank, 1963, p. 54). In 1902, the BFSS therefore transferred 755 of their schools to local school boards (Binns, 1908, p. 231). The voluntary sector's main problem was that it simply lacked the financial resources to build and run more schools.

A second major problem was the conflict of objectives. The churches often opposed government education initiatives. This arose first in the 1840s, when they resisted government inspection, then in the 1860s, when they resisted the role of government as a school provider. After 1870, the churches were also divided about whether Church schools should accept local rate funding (Cruickshank, 1963, pp. 58–9). In effect, churches put their religious objectives above the need to generate extra income. These arguments with the government made it difficult for church and state to work together, delaying rate support to voluntary schools until after 1900. The churches' reluctance to work with the state encouraged competition between churches and local school boards, leading to over provision in some areas.[11] This competition worsened the financial standing of church schools.

Money also lay at the heart of the problem for voluntary hospitals. Table 5 shows that in 1891, 87% of voluntary hospital income came from gifts or investments, and just 8% from charges to patients and workers' compensation schemes. Between 1870 and 1900, voluntary hospitals focussed on raising ever larger sums through donations. This included royal support for Saturday and Sunday fund collections. Even so, Waddington (2000, p. 1) describes London voluntary hospitals as being in an 'endemic financial crisis'. Faced with similar challenges, by 1903, American voluntary hospitals met 43% of their costs from patient payments (Stevens, 1989, pp. 30–1). Pinker's (1966, p. 149) data shows that English voluntary hospitals took until 1921 to get their patient income to this level. In both countries, the figures suggests that voluntary hospitals eventually changed their objectives from the charitable aim of treating the 'deserving poor' to treating those who could pay. The charitable objectives of UK voluntary hospitals therefore limited their capacity to invest and grow in the nineteenth century.

There was little competition between voluntary and public sector hospitals. The public sector mainly built lunatic asylums and fever hospitals, while the voluntary sector provided general acute hospitals. The closest they came to competition were workhouse infirmaries

Table 5. Sources of income for voluntary hospitals.

	Donations	Investment income	Patients/ insurance	Other income	Income per bed
	%	%	%	%	£
1891	52	35	8	5	53
1921	41	18	38	3	153

Notes: Covers only 65% of hospitals in 1891, and 47% in 1921.
Sources: Pinker, *English Hospital Statistics*, pp. 149, 152.

and voluntary general hospitals. But even here, they were serving different client groups: the infirmaries the 'undeserving poor' and the general hospitals the 'deserving poor'. Instead, the competition was between voluntary hospitals, with three-quarters of London hospital beds within one mile of Charing Cross (Waddington, 2000, p. 9). London also had 67 specialist hospitals which mostly cared for paying patients (Select Committee, 1890, p. 210). In contrast, asylums and fever hospitals catered for patients who were unable to pay for their care. The voluntary sector therefore chose not to enter the growth areas of asylums and fever hospitals.

5. Why did local authorities become more important as investors?

The previous two sections have shown why companies and voluntary organisations invested less in utilities, schools and hospitals. This leaves the question of why local authorities increased their investment in these services. This section first looks at the extent to which councils' water, gas, electricity and tram services were profit or loss-making. I also examine the evidence from council takeovers of utility companies, and show this supports the earlier conclusions about councils' objectives. The section then considers the motives of local authorities in increasing investment and taking over company utilities and voluntary schools. These include: dissatisfaction with company services; the impact of franchise extensions; competition; and government encouragement. A few potential pressures which had no impact on council behaviour are also mentioned.

Millward (2013, p. 195) in particular argues that local authorities developed traded services to make profits which they would use to 'relieve the rates'. Local authorities themselves did much to foster this view when vaunting their achievements in municipal trading (Select Committee, 1900, pp. 140, 163, 185, 202, 215, 235). Sir Arthur Rollit, the president of the Municipal Corporations Association, also promoted the view that local authority utility provision was profitable.[12] But until 1904, the annual taxation returns did not accurately show the profit or loss for individual services like water or gas. The annual cost of the huge debts councils had incurred to build or buy the fixed assets for utilities were not reported at service level in these returns. Table 6 shows that over a 16-year period, the local taxation returns presented an average £2.9 m a year surplus of income over day-to-day costs for the four utility services. Using the outstanding debt figures for each service, which do appear in each return, I have calculated the annual costs of this debt for each service. Table 6 shows that

Table 6. Local authority utility services, net losses 1884–5 to 1889–1899.

	Outstanding debt at March 1900	Income	Aggregate totals for 16 years, 1884–5 to 1889–1899			
			Expenditure		Ratepayer impact	
			Day to day	Debt service	Net loss	Net surplus
	£m	£m	£m	£m	£m	£m
Water	53.4	43.9	16.8	35.9	–8.8	
Gas	19.8	69.2	52.8	14.5		2.0
Electricity	7.9	2.6	1.5	1.0		0.1
Trams	5.8	5.2	2.9	1.5		0.8
Totals	86.9	120.9	74.0	52.9	–8.8	2.9
Average per year		7.5	4.6	3.3	–0.6	0.2
Net annual cost to ratepayers					–0.4	

Sources: Local Taxation Returns 1900 (193), 1895 (329), 1890 (196, 364) for outstanding debt, day to day expenditure and income, from five-year summaries. Debt service costs have been estimated based on outstanding debt at the end of each year, and an average interest rate of 3.75% and repayment over 50 years.

the costs of servicing this debt was £3.3 m a year, creating an overall loss of £0.4 m a year for the four utilities.

An 1899 annual return to government continued the confusion about profits.[13] The return asked authorities for their costs on all their trading activities, and what they used any profits for. Over 170 authorities said they made a profit on their water undertakings, and 79 said they used the profits to keep down the rates. After including debt service costs, only 25 out of the 170 authorities made a profit on water undertakings. The annual tram returns to Parliament simply excluded the costs of servicing capital.[14] This practice of ignoring debt service costs has led to an exaggerated view of profits on these council utilities, and a mistaken view of councils' objectives in providing these services. Councils were therefore just as flexible in their accounting for profits as companies (Lee, 1975, pp. 19, 21; Pollard 1965, pp. 271–284). While councils may have believed their utility undertakings were profitable, the evidence in Table 6 is that losses on water were three times larger than the profits on gas, electricity and trams. Even ignoring the losses on water, the profits on gas, electricity and trams were negligible at an average 0.5% of the £40 m a year rate income of local authorities.

A more convincing view of local authority objectives comes from the financial performance of 36 gas, electricity and tram undertakings taken over by councils between 1889 and 1899. Local authorities took over many more companies than appear in Table 7, but comparable financial information is only available in this minority of cases. A similar analysis for water undertakings is impossible, because too few sets of financial results are available for private water companies outside London. Table 7 shows that local authorities significantly reduced prices and increased investment in newly acquired gas, tram and electricity undertakings. The result was a faster increase in output volumes, though at the expense of lower returns on capital, compared to the private companies. The comparisons make it clear that council objectives in taking over utility companies were to increase the growth in users, not

Table 7. Impact of local authority takeovers of utility companies.

Panel A: Gas, 1889–1899 (No. of undertakings)	Price change	Increase in capital	Return on capital, 1899	Growth in output
Companies (92)	5%	54%	7.6%	42%
Cos taken over by LAs (10)	–19%	87%	6.3%	96%
Panel B: Trams, 1889–1899	**Price change**	**Increase in capital**	**Return on capital, 1899**	**Growth in output**
Companies (71)	–1%	4%	8.6%	10%
Cos taken over by LAs (23)	–37%	145%	5.8%	57%
Panel C: Electricity, 1896–1899	**Price change**	**Increase in capital**	**Return on capital, 1899**	**Growth in output**
Companies (29)	–15%	34%	8.1%	102%
Cos taken over by LAs (3)	–42%	283%	5.3%	175%

Notes: Panel A includes only undertakings with capital over £80,000 in 1899. Gas capital totals have been adjusted to reflect the capital reconstructions in the 1890s for two London companies.
Everard, *Gas Light and Coke Co*. 284. Cos taken over by LAs' = number of company undertakings taken over by local authorities.
Sources: *Gas undertakings*, PP 1900 (143, 144), 1889 (97, 98), *Tramways* PP 1890 (282).
1900 (315), Electricity Garcke, *Manual of Electricity Undertakings*, 1896, 1899.

to earn profits for the ratepayer. There were, however, a range of motives behind councils' growth objectives for individual services.

Council dissatisfaction with private companies' performance was behind the takeover of water companies. Evidence of why 26 cities and towns took over their water companies is in histories written to mark 50 or 100 years since incorporation.[15] Of the 26 local authorities, 25 took over their local private water companies because of dissatisfaction with the quantity or quality of the company's water. Chamberlain (Briggs, 1963, p. 219) used the additional argument that water supply ought to be under democratic control, but this was the single case of this reason for a council takeover of a utility company. Councils were also under pressure from medical officers of health to improve access to clean water in cities and towns. This pressure gained legislative support in a series of public health acts between 1866 and 1875.[16] The municipal biographies show that having taken over a local water undertaking, 17 of the 26 then invested heavily to improve both the quantity and quality of the local water. Investment also increased after the public sector Metropolitan Water Board took over the London water companies in 1902 (Ball & Sunderland, 2006, pp. 265–7). Falkus (1977, p. 145) writes that 'probably the main factor encouraging municipalisation (of water) was dissatisfaction with the existing state of supplies'. The evidence here removes the need for the 'probably'.

The example of trams also shows councils' dissatisfaction with company performance. In the 1890s, Glasgow corporation wanted lower fares, provide new tram lines to the suburbs, and electric rather than horse trams (McKay, 1976, pp. 174–8). But the company running the lines refused to change, believing the new policies would make their undertaking loss-making. Eventually the corporation took over the tram company and implemented its low fare and high investment policies. The number of councils (including the new London county council) taking over tram companies shows that Glasgow was not an isolated case (Select Committee, 1900, q. 2113; Ball & Sunderland, 2006, pp. 251–2). These authorities were so dissatisfied with the performance of the private tram companies that they were willing to pay good prices to take them over. After the takeovers, councils substituted their longer-term growth objectives for the short-term profit objectives of the companies.

There is much evidence that councils changed their objectives for utility undertakings over time, from wanting to earn profits to wanting to expand services to local people. Their belief in the profitability of their utilities may have made it easier for them to justify broader objectives for these undertakings. This changing local authority view is consistent with the waning influence of the low rate supporting 'Economist' movement in large city authorities after the 1850s (Hennock 1973, pp. 313–5). Increasingly, councillors were professional and working men, and 'consumers of the municipal services' (Hennock, 1973, p. 329). In 1929, the Balfour Committee noted a move away from councils treating utilities as 'primarily profit-making concerns owned by ratepayers' (Balfour Committee, 1929, p. 308). Instead, councils aimed to achieve 'the largest possible utilisation of the service by the public' (Balfour Committee, 1929, p. 308). Lizzeri and Persico (2004, pp. 3) explain this change by suggesting the franchise extensions of 1867 and 1884 led to councils becoming more 'public orientated'. They argue (Lizzeri & Persico, 2004, pp. 6, 30, 49) that this change resulted in higher spending on the public goods of water, health and education.

The literature on individual councils also has evidence of the development of this more consumer based longer-term growth objective. Leeds corporation took over the local gas company, hoping to make a profit. But later, it decided to reduce prices to expand the

number of gas consumers (Barber, 1975, p. 394; Barber, 1980, p. 319). Barber says the council's new objective was to act in the interests of the consumer, not the ratepayer. There are two reasons why councils wanted to increase gas usage. By 1899, there were 1.8 m gas consumers (PP 1900 (143) and (144), Gas undertakings) but this was still a minority of households, with the majority either without lighting, or using candles or oil. Local authorities therefore wanted to improve the living conditions of the majority of households. They also wanted to expand the use of street lighting, and not be subject to monopoly pricing by a private gas company. In Birmingham, Chamberlain expressed a similar consumer-based objective in saying he would use any profits on water to reduce prices to users (Briggs, 1963, p. 224).

Councils' reasons for establishing or taking over electricity undertakings were twofold. Councils were becoming large electricity consumers as they electrified their tram services. As with gas, councils wanted to buy their electricity as cheaply as possible, so having a council undertaking could make economic sense. In addition, electricity provided competition for gas, initially mainly for street lighting, and later for domestic lighting. Establishing a municipal electricity undertaking therefore provided some competition with private gas companies, and the hope of lower prices. There is no evidence of councils establishing or taking over gas or electricity undertakings to create more efficient networked supplies covering large geographic areas. Indeed, all utilities at this time were small, local, unconnected undertakings.

The driver for increased investment in schools was pressure from interest groups who wanted to expand educational provision. Eventually the pressure led to the passage of the 1870 Elementary Education Act. The Act intended public sector provision to be a backstop; it did not anticipate the state becoming the major provider. Sutherland (1973, pp. 95–6) says that initially around half the early school boards were established against local ratepayer opposition, usually on the grounds of cost. However, once established, school boards wanted to build more schools and increase attendance at considerable cost to ratepayers. In the early 1870s, the London School Board told its architects to design schools with no school hall, and 80 pupils per class (Spalding, 2012 [1900], pp. 63, 70). By 1898, the design standard provided for classes of 50 and a school hall. The impact on school building costs was significant, and not just in London. Some local school boards developed objectives that went beyond the Act and further increased costs. Notably, the LSB extended funding for evening classes and began to fund secondary education. The courts eventually judged both actions illegal. Like local authorities with utility services, local school boards wanted to raise standards and increase the number of service users.

The government went a stage further with hospitals, encouraging a larger public sector role in the growth of investment in the late nineteenth century. The passage of the Metropolitan Poor Law Act created a public sector building boom for fever hospitals, workhouse infirmaries and lunatic asylums. The government were responding to outbreaks of infectious diseases, and the need to treat rather than simply accommodate the sick in workhouses (Ayres, 1971, pp.18–9). The Act only applied to London, but the government quickly extended the powers to the provinces. The Act created the Metropolitan Asylum Board, which built three 2,000-place asylums and started work on ten isolation hospitals. MAB could access low-cost capital from the Metropolitan Board of Works and spread its debt service and running costs for the new hospitals across all London's ratepayers (Driver, 1993, p. 92). Both these technical issues made investment decisions appear easy to finance. Table 2 shows the rapid growth of investment in workhouse infirmaries in the 1860s and 1870s. As was the

case with schools, the new bureaucracy and pressure from professional staff increased both building and running costs (Abel-Smith, 1964, p. 85). Once local bodies were given powers to invest, they did so on a far greater scale than the government anticipated.

Local authorities' long-term objective was to increase the number of consumers of these six services. And they increased their investment and took over companies to deliver this aim. There were four pressures leading them to these actions: dissatisfaction with company performance; government legislation or pressure; the impact of franchise extension on voter numbers; and competition issues. The balance differed for each of the six services. For water, the main pressures were dissatisfaction, consumer views and government pressure. For trams, there was a similar dissatisfaction with company performance. Competition issues were important in generating public investment in gas and electricity, but as with water, improving living conditions was also important for gas. Like water, the government exerted pressure for public investment in schooling. The government also encouraged increased public investment in asylums, fever hospitals and workhouse infirmaries. The importance of dissatisfaction, government and voter pressure explains the high proportion of public investment in water, education and hospitals. These pressures were much weaker for gas, electricity and trams, and explain the lower public share of investment in these three services.

6. Conclusion

Many of the public services challenges faced by local and central governments in the nineteenth century are still faced by modern governments. There is still a tension between the interests of the ratepayer and the taxpayer on one hand, and the interest of the service user of the other. The difficulties of regulating and specifying service levels for monopoly providers are still a challenge for governments. And it is still the case that the easy answer to these problems is often to establish a public sector provider, or takeover an existing private provider. The nineteenth-century challenge of determining profits and losses still persists with many utility services. The lack of agreed modern day solutions to these four challenges makes it important to examine the response to them when they first appeared in the nineteenth century.

The conclusions of this article are important for four reasons. First, they overturn the common view that councils invested in utility services to earn profits. Second, they show the scale and importance of the early transfer of utility undertakings from the private to the public sector. Local councils decided on these transfers, rather than national governments as in the twentieth century. Third, local authorities' actions in nineteenth-century England can be analysed with the tools of business history, rather than those of political or economic history. Finally, the conclusions suggest there was nothing inevitable about the shift from private and voluntary to public provision of these six services. Instead, it was the result of self-inflicted harm by utility companies, churches, and voluntary hospitals.

Notes

1. Corporation of London annual accounts, From PP 1842 (467) to PP 1884–5 (318). Metropolitan Board of Works, annual accounts, from PP 1857–8 (515) to 1884 (86).
2. Generally included in annual reports of the Local Government Board and its predecessors.
3. Starting from PP 1886 (22).

4. *Committee of Council on Education Annual Reports* from PP 1839 (284) to 1883 (3706).
5. Starting from 1883 (300, 301) for gas, and 1877 (69) for trams.
6. PWLB was often under pressure to lengthen permitted borrowing periods.
7. Forster's description of the intentions of the Act. Hansard (Commons), 17 Feb 1870, col 444.
8. Gas Works Clauses Act 1847, Metropolis Gas Act 1860.
9. From a comparison of the 1890s data in Table 1 sources, and the earlier local acts establishing the companies.
10. Wilson (1991, pp. 209–210) notes that councils paid an average of £210 for £100 of share capital in 24 takeovers of north west gas companies between 1844 and 1878.
11. Analysis of school places and populations in parish areas. *Committee of Council on Education Annual Reports*, PP 1870 (165), 1880 (2562).
12. At speeches to National Union, 26-11-1889, British Institute of Public Health, 9-8-1895, Association of Municipal Corporations, 26-3-1898.
13. *Municipal Corporations (Reproductive Undertakings)*, PP 1899 (88).
14. *Tramways (Street and Road)*, PP 1899 (355) and 1900 (315).
15. Redford, *Manchester*, pp. 177–81; Jarvis, *Liverpool*, p. 76; Briggs, *Victorian Cities*, p. 219; Hennock, *Fit & Proper Persons*, p. 207; Hawson, *Sheffield*, p. 4; Wright and Jowitt, *Bradford*, p. 144; Allison, *A History of Yorkshire East Riding*, vol. 1, *Hull*, pp. 371–86; Gray, *Nottingham*, p. 193; Storey, *Leicester*, p. 108; Hamer, *Bolton*, p. 36; Gent, *Croydon,* p. 7; Beattie, *Blackburn*, pp. 151–2; Hunt, *Preston*, p. 214; Davey, *Birkenhead*, p. 60; Derby City, *Derby*, p. 92; Mulroy, *Halifax*, p. 25–6; Bennett, *Burnley*, pp. 355–7; Balmforth, *Huddersfield*, p. 12–3; Upton, *Wolverhampton*, pp. 109–11; Barker & Harris, *St Helens*, pp. 396–8; Munford, *Rotherham*, pp. 109, 114–5; Newton, *Exeter*, p. 257; Dewhirst, *Keighley*, p. 72; Wright, *Chesterfield*, vol. 4, pp. 118–9.
16. 1866 Sanitary Act, 29 & 30 Vic. c90; 1875 Public Health Act, s.55 & s. 62. 38 & 39 Vic. c55. Lambert (1963), pp. 380-6.

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