Educational Slowdown and Public Intervention in 19th-Century England: A Study in the Economics of Bureaucracy

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By

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This paper presents analysis and statistical measurement of the net effect of government intervention upon nineteenth-century British educational growth. By "net" effect is meant the stimulus to the public system minus the damage to private schools. The first part applies hypotheses from the modern economics of bureaucracy for an explanation of the strategy of the growing Victorian Education Department. It documents the way in which its discretionary behaviour led to the "crowding out" of private schools. The second part presents a simple economic model that illustrates the full potentialities of the "crowding out" effect, and the consequences for total (public and private) educational expenditure. The third and final section estimates the share of primary education in the national income 12 years after the major intervention: the Forster Act of 1870. It then compares this proportion with estimates for 1833 and 1858 and with estimates for other European countries and America. The total evidence is finally brought to bear on two questions: first, how did Britain's education effort in the "industrial revolution year" of 1833 compare with other European countries at similar income levels? Second, did education grow slower or faster in the remaining part of the century after the 1870 Act?

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2 The problem was outlined in general terms in E. G. West, (1970a), Chapter 10. The present paper attempts a rigorous investigation of the historical data.
The Complaint of Unequal Competition

It was openly recognized in the 19th century that the expansion of the public sector in education had an adverse effect on private schools. In 1859, for example, Horace Mann observed that the expansion of government schools would mean that they would be "either destroyed by the unequal competition" or taken over by the public sector. Whilst such displacement appeared to him as an escapable fact of life, to others it was a subject of serious complaint. In his evidence to the 1834 Parliamentary Committee on the State of Education for that year, the Lord Chancellor, Lord Brougham, observed:

It is probable that day schools for 1,200,000 at least are now supported without endowment, and endowed schools are established for above 170,000, making, in all, schools capable of educating nearly 1,400,000 children. But if the State were to interfere, and obliged every parish to support a school or schools sufficient for educating all children, two consequences would inevitably follow; the greater part of the funds now raised voluntarily for this purpose would be withdrawn, and the State or the rate-payers in each parish would have to provide schools for 2,000,000 of children, because the interference would be quite useless, unless it supplied the whole defect, which is the difference between schools for one-tenth, the present amount, and schools for one-seventh, the amount required to educate the whole people. Now to establish and maintain such a number of schools, would be a most heavy expense ... (it) would cost £2,000,000 a year. But supposing the expense provided for, I am clearly of the opinion that one great means of promoting education would be lost, namely, the interest taken by the patrons of schools supported by voluntary contributions ... That funds now raised by subscription ... will entirely fail, I take to be the inevitable consequence of establishing a

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3 Evidence of Horace Mann to the Commission of Inquiry into the State of Popular Education in England (the Newcastle Report) 6th December 1859 (not to be confused with Horace Mann of Massachusetts).
school rate. All will think they do enough by paying that ... To which I must add, that my belief is, that a surer way to make education unpopular and thus arrest its progress, could not be devised than making it the cause wither or a general tax or of an increase in parish rate.

Eighteen years later, Gladstone expressed the same fear, and in similar terms. His reference (below) to private effort, like Brougham’s, included the fees willingly paid by parents of all social classes. These were covering over one-third of the costs in the 1850’s.

It appears to me clear that the day you sanction compulsory rating for the purpose of education you sign the death-warrant of voluntary exertions ... Are we preparing to undergo the risk of extinguishing that vast amount of voluntary effort which now exists throughout the country?

By this time, however, the displacement effect was not just a matter of conjecture. There was widespread evidence that it was already in fierce operation. The Newcastle Report of 1861 observed:

....the complaint that the Government grant enables the public (government) schools to undersell, and so ruin them, is very common amongst the teachers ...

The point was:

... except in very favourable situations, the school fee cannot be raised much above the public school level, and that in consequence the private teachers bitterly complain that they find it difficult to earn a living ... They complain that the tendency of the interference of Government is to give a monopoly to a particular class of schools.

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4 Report, pp. 144-5
5 Gladstone’s intervention in the Education Debate, House of Commons, 1856
6 Vol. 1, page 95
A few years after the 1870 Act the board schools (the new 'Common schools') played the strongest of their (government provided) trump cards: their services were offered free. This "zero pricing" was an insuperable problem to large numbers of the independent schools, even those that were supported by endowments. The huge, but threatened, private sector of education consisted of two main parts, first the church schools, most of which were accustomed to receiving some amount of government aid prior to 1870; second, the completely independent schools whether religious or secular. The problem as it faced each will be examined in turn.

The Denominational Schools and the Displacement Effect

One explanation of the squeeze on the denominational schools can be offered in terms of the new economic theory of bureaucracy.\footnote{W.A. Niskanen} This theory is based on the hypothesis that members of any government bureaucracy behave so as to maximize, and continually expand, its budget. This is due partly to the fact that the heads of bureaus cannot keep the profits that accrue from efficient operation and thus have no incentive to operate efficiently. Also the size of personal salaries are geared to the degree of "responsibility" - and this in turn is related to the quantity of resources supervised. Steady expansion of the budget therefore is the most conducive to promotion and salary advance.

The theory however leaves room for administrators with a well-meaning desire to promote what they believe to be the widest "public good," or the basis of a public reputation. The hypothesis is that all the behavioural variables, from the narrowly selfish to the most unselfish, are a positive function of the total budget of the bureau. The administrator who needs most to increase his salary, and the one who most desires to demonstrate his "public spiritedness," both require an expanding public budget. In our context the theory can be used in a "weak" or a "strong" version. In the strong case the "public spirited- administrators will be dominated by the self-interested ones. Whilst the budget is predicted to expand in all instances it will
do so to a greater degree in the strong case for here there will be fewer scruples. For instance if the budget can be expected to expand faster with the gradual establishment of a *universal* system of public schooling that benefits the children of middle income parents as well as the poorest, this system will be "pushed" by the "strong" bureau even if the poorest would do better in a smaller *selective* system wherein all the benefits went to them exclusively. Evidence relevant to this will be examined subsequently.

Another feature of the "strong" bureau theory is that it can be predicted that it will engage in promotional activities favouring its own services. It will be increasingly jealous of rival bureaus and other competitors. It will also urge the need for "mergers," for "proper coordination," for "centralization," and ultimately for one exclusive monolithic body. The bureau will sponsor analysis and statistics concerning the services for which it is responsible, but it will ensure that this research and information is sufficiently self-serving to obscure or avoid any risk of threatening the growth of demand for the services that it supplies.

If, as sometimes happens, some study sponsored by bureaus turn out to be objective, thorough, penetrating and lucid, it will usually be classified or otherwise restricted; if the distribution of the few penetrating studies cannot be restricted, the bureau will usually sponsor other studies on the same subject as an excuse for delaying action or to dilute the effects of the former studies.

Next it is conducive to its objective for the strong bureau (a) to form alliances with supply (teacher) interests; (b) gradually to attempt to exclude all rivals by means other than normal competition. In our context the rivals included private bureaus and competing private suppliers of education. The rival bureaus were the religious societies through which public money was normally channelled. The competing

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8 In economic terms it is interested in shifting to the right the demand curve for its services. It is also interested in making the curve steeper (less elastic).

suppliers were the private schools, and the teacher training (normal) schools. Theory would predict that, given discretion, the new Education Department would have deliberately hindered the efforts of these competitors. In proceeding to the evidence it will first be necessary to go back to the origins of the Department itself.

The Origins of the Education Department

From the commencement of government aid to education in 1833 down to 1839 the public money (mainly school building grants) was channelled through The National Society and the British and Foreign School Society. On April 10th, 1839, an order in Council was issued directing the formation of a Committee of Council to administer the education grant which was at the same time raised to £30,000. (The Secretary of the Committee was to be, James Kay-Shuttleworth.) Preparation for this body seems to have been incubating for some time; for its first Minutes appeared only three days after its establishment. They announced that in future the new Committee of Council (the Education Department in effect) was to take over the administration of the building grants from the two religious societies (the rival private bureaus). The minutes were also aimed at the private teacher training schools. They decreed:

that no grant be made now or hereafter for the establishment of normal schools (teacher training schools), or of any other schools, unless the right of inspection be retained, in order to secure a conformity of the regulations and discipline established in the several schools with such improvements as may be from time to time suggested by the Committee.

In addition the Committee itself should

found a school in which candidates for the office of teacher in schools for the poorer classes might acquire the knowledge necessary for the exercise of their future profession, and might be practised in the most approved methods of religious and moral training and instructions.
The school was to include a model school, in which children of all ages from 3 to 14 might be taught. The general instruction was to be such as was common to all kinds and denominations of persons calling themselves Christians, whilst periods were to be set apart for such peculiar doctrinal teaching as might be required for the religious training of those children who were wishful to receive it.

These proposals caused a public controversy in which the threatened private bureaus were active. A meeting of the National Society under the presidency of the Archbishop of Canterbury pointedly resolved that instruction in the truths and precepts of Christianity should be under the superintendence of the clergy, and in conformity with the doctrines of the Church of the realm as the recognised teacher of religion. Subsequently, Parliament was prompted to censure the new Education Committee. First there was an amendment by Lord Stanley on the education vote in the Commons (although this was defeated by five votes). In July the Archbishop of Canterbury carried a series of resolutions in the form of an address to the Queen by a majority of 229-118. The resolutions deprecated the avoidance of Parliament’s consent for important decisions on education by the Committee. These were the days when the Parliamentary system suffered the defects of "delegated legislation"; that is the practice of excessive use of administrative orders in Council that made such serious changes as to be equivalent to statutory edits. We shall see that, despite the Archbishop's resolutions, the Committee continued for much of the century to enjoy its discretionary powers and to avoid seeking the consent of Parliament on many fundamental changes. It is true that in the short run the Secretary of the Committee, Kay-Shuttleworth, was forced to devise new formulas in order to placate the

10 Some insight into the pressure and the motives for setting up the Committee of Council for education can be gleaned from a letter from Lord John Russell to Lord Landsdowne dated February 4 1839. The letter makes much reference to "Her Majesty's Commands." Among the first tasks of the Committee was to be the setting up of a normal school. Four principle objects were to be kept in view. (1) Religious Instruction. (2) General Instruction. (3) Moral Training. (4) Habits of Industry. Russell's letter clearly shows apprehension about the difference of opinion on these objectives between Churchmen and Dissenters. "On this subject I need only say that it is Her Majesty's wish that the youth of this Kingdom should be religiously brought up." The letter is reproduced in J. Stuart McLure (1965). It is interesting to remember that the Queen was only 20 years old at the time.
adversaries. The Government however persisted with its new bureau and the Committee of Council virtually became the Education Department. It did do, incidentally, without direct Parliamentary authority; authority was obtained indirectly, namely by annual votes for the salaries of the vice-president and various Committee officials.

The professed government objective in setting up the Committee was to spread education over all parts of the country, even though, to a large extent, it was already so spread. (See Brougham's remarks above.) The Committee proceeded to take full control of the annual education grant; at the same time Parliament's control over it was attenuated.

**The Initial Encroachments on Private Schools**

The encroachment on the private school competitors followed that on the private bureaus and the teacher training colleges. The first method used was that of partial "takeover." The Department was able to use its discretion to expand the public sector by relaxing the conditions for receiving government grants. Schools that could have managed without them were gradually given access to the public funds in exchange for their agreement to regulations and to inspections. Next official statistics were produced by the Department alleging educational "deficiencies" after the 1840's. These "deficiencies" were based on an unexplained target school population of one in six of the total population, a target that was not reached by any other country and was conceded to be impracticable. Such allegations of deficiencies nevertheless prepared the ground for further public growth. In the Inspector’s Reports,

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11 “For several years after the initial controversy over the proposed normal school many promoters of new Church schools were reluctant to accept the Committee controlled building grants. Considerable suspicion was abroad that the new government Department was seriously attempting to wrest from the church the whole educational function
12 The Department conceded quite openly on such use of its discretion. See the evidence of R. Lingen in the Newcastle Report (1861), Vol. 6, p. 15.
13 See E. G. West *Education and Industrial Revolution*, Ch. 3 Batsfords (London) 1975
meanwhile, educational growth outside the public sector was played down, ignored, or "damned with faint praise."

The Committee in Council (hereafter the Department or Bureau) next made a successful bid for the factor supply, the teacher interests. This was accomplished with the introduction, in 1846, of the pupil-teacher system into private schools, provided they would accept public supervision. An elaborate scheme emerged outlining the role of the pupil-teacher, the examination he had to pass, the amount of instruction to be given by the principal teacher, and the stipends to be payable by the Department. Payments were, in the mid 19th century, relatively attractive to all concerned. The pupil teacher was paid £10 if he completed his first year satisfactorily. Increments of £2.5 would follow in each of the next five years. One pupil was allowed for every 25 scholars in a school. Head teachers qualified to have their incomes augmented by a special Departmental grant dependent on the examination success of the pupil-teacher and the willingness of local voluntary effort to match the extra public expenditure. In addition, the Department allowed to head teachers £5 for instructing one pupil teacher, £9 for two and £12 for three. Teachers would qualify for pensions after 15 years teaching. The interests of the school masters and managers were thus engaged quite effectively; and this at a time when the teaching profession was becoming organized and on the brink of significant political influence. Some necessary conditions preparing for the growth of bureaucracy as outlined in the earlier model were clearly being fulfilled.

An Education bureau that aspired eventually to monopolize education would be interested in reducing the ability of private agencies (including the Church) from filling the rest of the "gaps" in education. As it was very many of these gaps were slowly being filled without bureau assistance simply with the passage of time, with some Church aid, and with increases in family and other incomes. Educational deficiencies (defined so as to include a schooling of too short a duration), were concentrated in the lower income families and in the poorer areas generally. By the
1840's the hands of the Churches had become somewhat tied in this particular
-poverty battle”; and a discretionary departmental ruling was again the cause. A con-
dition for the receipt of government building grants was that an equivalent sum
should be contributed by local proprietors or local voluntary help from persons living
within four miles of the parish. The relative absence of necessary -volunteer wealth"
in the poorer parishes meant that they were often quite unable to generate any public
grants. When the more prosperous churches attempted to proffer assistance, the
Department stopped them by laying down that they were not to be allowed to use
any portion of the public grants to be transferred to poor neighbours. By 1870 the
Government was able to make implicit criticism of the Church for not having
provided enough schools in these parishes.14

The 1870 Act's Promises to the Church Schools

The few years after the 1870 Act were the most crucial to the expansion of the bureau
"empire." After a steady stream of advice from his officials W. E. Forster used his
legislation of 1870 to superimpose upon the existing government system of subsidies
to largely private and usually church-connected schools, a new provision for public
("common") schools called “Board Schools.” It was these new establishments, which
were to be supplied "where necessary" by "School Boards," that provided the main
chance for Departmental expansion (for special reasons to be explained in Section 11).
Forster promised the subsidized private schools sufficient future finance against
competition from the new publicly provided schools. The ultimate expression and
detail of these promises however was left to the Administration.

During the Bill's passage through Parliament, it was eventually agreed that while
the new School Boards were to be financed from new local rates (property taxes),
they were not to be allowed the power of aiding denominational schools. To offset

14 Conformity with building rules were insisted upon by the Department in the 1840's. There were
particularly precise regulations about the width of the rooms, ventilation and materials used. Later in the
century new Departments found fault with earlier requirements and expensive changes were insisted upon.
this disadvantage a compromise was reached whereby the Church schools were to receive an increase of the grant from the *central* government instead of aid from the local rates as originally planned. The loose way in which the compromise was worded should be noticed. Gladstone, who first introduced it on June 16, 1870, confidently announced that this matter did not need positive legislation but could be handled later by a Council Minute. In his words:

> We all along held out to the promoters of Voluntary Schools, that in their competition with Rate Schools, they should receive some assistance towards lightening the burden of their expenditure. What we propose is this—that in lieu of the mode now inserted in the Bill of giving this augmentation from public sources to the means available for secular instruction in Voluntary Schools, the amount of that augmentation shall be drawn from the Exchequer, instead of from the (local) rates. We do not accomplish this object so much by positive provisions in the Act of Parliament, as by negative changes. It would be carried out principally by a *modification of the Minutes of Council* under which these grants are now made. (our italics)

Later on, Gladstone acknowledged that the augmentation would be "within a maximum of 50%." Mr. Gathorne Hardy then challenged W. E. Forster (June 16, 1870) to give better guarantees on this matter. He thought that Forster "...ought to put on paper what it is proposed to do in reference to the Revised Code next year." Forster merely reiterated Gladstone's promise of contemplating an additional grant of not more than 50%. Sir Massey Lopes (South Devon) followed up with a much more direct question: He wished to know if the Government would insert in the Bill a provision with reference to the extent and the amount of the Government grants, so as not to leave them to the caprice and whim of the Education Department, more especially when they exercise such arbitrary and absolute powers?" Forster was unyielding. It was absolutely impossible, he declared, to put upon paper at present
the additional code. "What had been said was, that the Government looked forward to additional grants to schools not exceeding 50%.

A few days later (June 29, 1870) Lord Robert Montagu proposed a motion which reflected even stronger distrust of the Department. The Prime Minister, he observed, had offered a compromise which involved concessions from all parties but it ought, like the others, to be made permanent, and put into the Bill. It was only just that they (the concessions) should be equally permanent and secure.” Montagu warned that if the voluntary schools were eventually deprived of the maximum grant increase of 50%, while they lost the other sources of income on which they relied, "... they would be starved out, and the Bill, would be a measure not to complete, but entirely to supersede the existing system.” If the grant conditions were not put formally into one of the schedules of the Bill "... there would be a perpetual liability to change by the Education Department, or the House. The Minister at the Department might have different views, or might simply be given to change.” Montagu's proposal had many supporters.

Attempting to settle matters, Mr. Disraeli finally intervened. In effect, he quietly insisted, the whole thing was a matter of the promises of gentlemen; and the British House of Commons was above all a "gentlemanly- institution.

Considering the nature of the Bill before them, it must necessarily be a moral assurance. To suppose that any Government, much less one represented by the present Prime Minister, should have made the statement which they had made respecting these increased grants, and that in due season they should not stand to their guns, was really to suppose that the public business of this country would be carried on by men attracted by very different principles and contrary sentiments to those recognised by both parties in the House.

After this Lord Montagu allowed his motion to be negatived. Subsequent events showed that Montagu's fears were well founded. The eventual fate of the promised
grant was as follows. It was raised 50%, the grant for average attendance was raised from 4s. to 6s. and the grant on examination from 8s. to 12s. But the increase was only nominal. The conditions of the grant were so arranged by administrative changes that the full increase was impossible to obtain. First there were severe Departmental alterations in the conditions of examination. Half-time scholars had to put in 150 attendances instead of the previous 100, an increase of 50%. Full-time students had to attend 250 times instead of the previous 200, an increase of 25%. (Schools in migratory districts especially felt the effects of this change.) Second, no attendance was to count unless two hours (to the minute) of secular instruction had been received. Third, the old condition that the grant should not exceed the amount raised by school fees and subscriptions continued to be strictly observed. That is, the grant for any year could not exceed the annual school income derived from voluntary contributions, school fees, and any other sources other than the Parliamentary Grant. This third condition, (hereafter the "Parity Condition") was to play a critical part in the eventual financial difficulties of denominational schools.

It is important to understand that the original provision of Forster's Bill (first reading February 17, 1870) was that the new school boards were to be able to use the rate funds to assist the denominational schools as well as, where necessary, to set up their own. In Forster's words:

They may either provide schools themselves, or assist the present schools, or they may do both.

Whilst this method was later dropped, the intention behind it, of equality of treatment, was apparently maintained. Suppose however the first method had been persevered with and the denominational schools had received assistance from the local rates. Then under the Parity Condition this assistance would have been treated as money to be matched by the central Government Grant, the procedure adopted with the new Board Schools. Under the adopted second method however the private
schools lost this advantage. The Board schools thereafter earned a bigger central government grant than the voluntary schools in so far as their matching income was bigger by local rate assistance. The 50% additional grant was thus largely precluded from the poorer voluntary schools because they had little alternative income sources with which to match it. This situation not only led to severe hindrance to the continuation of church attempts to build new schools in the poorest "gap" areas (where they were concentrated); there were now new difficulties faced by existing voluntary schools when neighbouring board schools began to compete for students.\footnote{The voluntary school powers were reduced by yet another administrative alteration of grant conditions. The Act stated that the grant could not exceed the school income "derived from voluntary contributions, and from school fees, and from any sources other than the Parliamentary Grant." The words in our italics were replaced in the Department by the word "rates." The result of this was that endowments could not now reckon as meeting the Grant. In 1872 a new code adjustment by the Department (Act 32(a) 2 New Code) had the effect that if school expenditure turned out in one year to be large and the grant small, the deficiency had to be made up by the managers; if in another year the expenditure turned out to be smaller than expected and the grant better than expected, the grant had to be reduced. Thus the support of the poor school became even more hazardous. In fact the poorest Church schools lost £ 13,221 in 1874 because of this new code (Report for 1874 p. 17).}

Whilst Gladstone mentioned the figure of up to 50% grant increase for voluntary schools, the actual increase by 1874 had amounted to only half that proportion. Church schools in that year received 11 shillings per head which was only about 25% above the 1870 grant of 8s. 9d. per head. Eventually some political agitation was organized by the denominational school interests with the result that Lord Sandon's Act was passed in 1876. Although this Act did something to remove the financial plight of the church schools, two years later the administration confronted them with the biggest obstacle of all. The education bureau (the Department) now took it upon itself to establish the rule that where school boards existed, they had the first right to supply the deficiencies of the gaps. The gaps of course were a continuous phenomena, for the population growth was producing thousands of new students requiring new places. Where the school boards accepted the responsibility to supply these growing needs after 1887, as they invariably did, additional private school accommodation was officially deemed unnecessary. New proposed voluntary
establishments were now completely ineligible for any subsidy, and this by administrative (bureau) decree.

From the voluntary school point of view, Lord Sandon’s Act of 1876 had clearly come too late. Board schools had by then attained a substantial threshold and for two reasons. First the size of the gaps to be filled had been statistically overestimated, often apparently with Departmental connivance. Second, the fact of the denominational school’s financial disabilities (aggravated if not caused by Departmental regulations) in the early 1870’s, had put them at a severe disadvantage in the poorer areas compared with the board schools. A wide network of the latter was in existence by 1878. This was all that was necessary to allow them to carry out their final wave of expansion; and this under the protection of the bureau’s decree that existing school boards were to have the option of all further "gap-filling."

In absolute terms the number of voluntary schools built after 1870 still looks large to a 20th-century observer. By 1886 over three million places had been added, and a half of them were due to voluntary agencies. This proportion, however, would have been much bigger had it not been for the failure to fulfil Gladstone’s 1870 promises. But the important statistical feature to notice was the differential rate of growth. The school board’s firm foothold by the late 1870’s caused the public/private displacement to become progressive. As the board schools exploited their new monopoly rights of servicing the new populations in the gap areas, others competed on such unfair terms with voluntary schools even in the "non-gap" areas as to cause large numbers of these into school board takeovers. Whereas in 1879 voluntary schools were providing more than two-thirds of the school places in the country, by 1886 the proportion had fallen to three-fifths.

It is not the present purpose to enter the debate on the "rights" or "wrongs" of these historical events. Clearly it is open to majorities in the political process to declare that

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16 See Joseph Nunn (1872), and also E.G. West (1970a), p. 15 1.
denominational or private schooling is socially undesirable. It has often been argued for instance (as Horace Mann did) that in the interests of "social cohesion" it is necessary to send all children to the "same sort of school" 17 or to schools that have a "public quality". 18 The question that is relevant to this position here is whether political majorities through their democratic processes in the 19th century did articulate a desire for the supersession of the pre 1870 system. Since our answer has been in the negative, alternative explanations of the actual events are required. We have accordingly applied some positive economic (predictive or explanatory) tests including those of the economies of bureaucracy. The verdict is that the evidence seems consistent with the hypothesis of this new subject. The denominational schools suffered considerable demotion yet, to repeat, there was no explicit declaration in the 1870 Act, or any other Act, that such a result as the primary policy aim. Indeed, when presenting his Bill, W.E. Forster went out of his way to emphasise

...we must take care not to destroy in building up – not to destroy the existing system in introducing a new one.

The actual events, it seems, were much more the consequence of discretionary bureau behaviour, a behaviour that has now been described in some detail.

**Profit Earning in the Private and Public Sector**

The ability of the board schools, enjoying the aid of rate revenues, to lower their fees could be matched to some extent at least by the denominational schools; for often they could draw upon private endowments. The completely independent school on the other hand did not have such auxiliary aid with which to retaliate. Schools “run for private profit” were at all times in the 19th century precluded from public subsidy; for the word

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17 For a modern version of the social cohesion argument, see Mark Blaug (1967).
18 The phrase "public quality" must mean the quality of being controlled by the political process. To some people this in turn conjures up an education that is "neutral" in ideology, or religion. Yet "Secularism ... anti denominationalism," "nationalism," and "Socialism" were all historically associated with the drive for publicly provided schooling; and these interests were just as much ideological as those that were being superseded.
"profit" seems to have been used pejoratively. Yet in the economic sense most private schools did not make profits. In the highly competitive conditions of the times, they were only just covering their costs; that is their proprietors were earning no more than they could elsewhere.

"Profit-earning" in the economic sense was indeed more applicable to the public sector schools. The latter contained public employees who were more than covering their opportunity costs; in other words they were enjoying special rents ("profits") from working for the government. Interestingly enough the phrases "profit-seeking" and private adventure schooling" were used most commonly by bureau officials. It is arguable that, unconsciously, this practice could have served the purpose of distracting attention from their own economic profits. There were of course two levels of bureaucracy, that of the local school board, and that of the Education Department. The primary attention here is upon the latter. But it's fortunes depended ultimately upon the growth of the smaller public bureaucracies since they were instrumental in reducing the share of the biggest competitor, the private schools. This event automatically raised the central budget. The theory of bureaucracy argues that it is the steady growth of their budget that bureaucrats desire most because it increases both their nonpecuniary benefits and their promotion prospects. Salary levels have to be high enough to attract new people into an expanding department and these salaries, should cover the costs of movement. Meanwhile, the incumbents will enjoy a higher place in the expanding hierarchy because they will be responsible for the tasks of supervision and of teaching new skills to newcomers. There are incentives meanwhile, (as we have illustrated earlier), for the bureau to make alliances with factor (teacher) supplies. Such alliances in the 19th century resulted in nice profits out of the government for the teacher or school manager who "went public."

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What were the consequences of intervention and bureau behaviour for total expenditure? Some recent empirical analysis by Professor Sam Peltzman seems relevant. He has demonstrated that, in 20th-century higher education, it is possible for government intervention to lead to lower total levels of expenditure. Two key circumstances in Peltzman's model are repeated in the environment of British primary education after 1870: First, a large initial base of privately provided education; second, the introduction of one particular method of government intervention, the "subsidy in kind" method. Under it those who choose public aid must accept a fairly homogenous quantity (£x) of education from government-provided institutions (e.g., the board school system). If a family wants a bigger quantity, after intervention, say £x + 2, it has to forfeit the public aid altogether. This provides the main key to the paradox. Many families may accept the "free" £x worth of public education even though they would purchase say £x + 1 worth in the absence of intervention. If the consequent reduction in their children's school expenditure is sufficiently large it could outweigh the increase on the poorest so that total expenditure declines.

Compare this "subsidy in kind" with 'money subsidies' of the 1833-1870 type. Under this method the government rebated a fraction of the amount charged at any school chosen. The subsidy allowed the direct payment (the fee) to be lowered. The lower fee could have been a uniform reduction of say one-third of the original price of different schools. The one shilling, nine-penny, and sixpenny schools could then charge eight pence, sixpence, and four-pence per week, respectively. This pre 1870 system of money subsidies permitted the family to choose amounts of schooling in excess of a uniformly fixed £x without forfeiting the public aid. If the socially desired minimum of £x was an education costing four-pence, a family that was already buying a sixpenny education would not, as in the "subsidy in kind" method, be tempted to reduce expenditure to four pence. Indeed it would more likely to increase
it, e.g., to an eight-penny education. For an extra expenditure of two-pence (from sixpence to eight-pence) it could obtain an increased educational value of sixpence (from sixpence to one shilling). The family would do this by changing to a more expensive, eight-pence-a-week, school that was receiving a subsidy of 4d = one-third of the total cost. The point is that since, in so acting, public aid is not forfeited, the family is more encouraged to increase its expenditure too; and this is not to the detriment of poorer consumers since factors will be encouraged from outside so as to cause an increase in the total supply of education.

An Economic Model of the Displacement Effect

To illustrate most of the possibilities we shall employ a highly abstract model of a community of eight equal size families (see Table 1). Assume there are no non-parents. Also assume three income groups earning 100 shillings, 200 shillings, and 300 shillings, with two, six, and two families in each group, respectively (column 1). Suppose that prior to intervention the poorest two families were purchasing a 10 shillings per year education each, the middle six 20 shilling education each, and the wealthiest two a 30 shilling education each (column 2). The total "national" expenditure on education is therefore 200 shillings. Now suppose the government makes available at government schools exclusively, a free schooling worth 12.5 shillings and there are no excess costs in so doing, no "costs of bureaucracy" for instance. The two poor families will obviously accept; their consumption increases by 25% and they have no direct costs. The middle income, paradoxically, will be presented with an additional cost. If it persists with its 20 shillings education it will give up the right to receive a 12.5 shilling one free of charge; a decision to forego this "gift" is an opportunity cost. It is conceivable that it will judge that the continuation of the private schooling not worth such cost. This is the assumption we make in Table 1 (column 4) where all six middle income families opt for the "free" education. With respect to the two rich families we assume that their intensity of preference for a 30 shillings schooling is in their case such as to cause them to consider the new
opportunity cost (of foregoing the free government schooling) not sufficiently high to justify the transfer.

Table 1: Hypothetical Family Expenditure on Education Before and After Government Intervention (Shillings)

<table>
<thead>
<tr>
<th>Number of families</th>
<th>Income per family (shillings)</th>
<th>Value of each family's education purchased before intervention (shillings)</th>
<th>Total expenditure on education before intervention (shillings)</th>
<th>Value of each family's education consumption when available “free” (worth 12.5 shillings)</th>
<th>Total expenditure on education after intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>public private</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td>10</td>
<td>20</td>
<td>12.5</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>200</td>
<td>20</td>
<td>120</td>
<td>12.5</td>
<td>75</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
<td>30</td>
<td>60</td>
<td>30</td>
<td>- 60</td>
</tr>
<tr>
<td>Totals</td>
<td>10</td>
<td>200 all private</td>
<td>Public + private 160</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total tax revenue required for public sector schools = 100 (from Table 1)

This is of course a hypothetical case only and we have yet to test it empirically. Before we do this notice that it demonstrates some of the possibilities suggested in Peltzman’s theory. First, it shows how some families could move to a lower valued education, after intervention of the 1870 type. Second, in columns 3 and 5 we see that total ”national” expenditure on education could fall from 200 shillings after intervention (hereafter we shall call this the Peltzman effect). Third it shows how public funds might not be targeted upon the poorer families that most need them. The total of public funds used is 100 shillings but only 25 shillings are reaching the two poor families. The remainder is going to the middle income families who do not need them; for they can be relied upon to purchase 20 shillings worth privately; and this is above the social minimum of 12.5 shillings. Notice however that although the national expenditure on education falls, the size of the public sector is increasing - and it is this increase that plays the dominant role in the economics of the “strong” bureau; the key maxim and is the size of its budget, not national expenditure.
TABLE 2: Hypothetical Distributions of Tax Burden After Government Intervention

<table>
<thead>
<tr>
<th>Number of families</th>
<th>Income per family (shillings)</th>
<th>(a) % of income</th>
<th>(b) % of income</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>100</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>200</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
<td>30</td>
<td>15</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>10</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Total tax revenue required for public sector schools = 100 (from Table 1).

Before proceeding to the evidence we shall discuss some further qualifications. In Table 2 we examine two different hypothetical allocations of the taxes necessary to finance the subsidy: (a) a proportionate tax on incomes (of 5%); (b) a regressive tax which starts with the rate of 12.5% on the poorest two families. In case (b) there is no redistribution of wealth in favour of the poor families. Each of them are now paying in taxes an amount that is equal to the value of their "free" education.

Recall that the original historical aim of intervention was to so expand it that there would be an improvement in national prosperity and in law and order. The first of these objectives calls for an expansion of educational expenditure beyond the non intervention levels. In our model intervention can be inefficient or even counterproductive; the displacement effect can have the “perverse” result of lowering national expenditure. With respect to crime reduction, the Victorians were thinking mainly in terms of educating the poor. In our model the system is inefficient because much of the public money does not reach them but is "siphoned" away by the middle income groups. Moreover, insofar as the tax is sufficiently regressive (as in column 3 of Table 2) poverty is not relieved because the poor are fully "paying for" their "free"

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20 A regressive tax is defined as one in which the tax rate decreases as the tax base increases. Here the tax base is income and as it increases, going down column 3, the tax rate falls from 12.5 % to 2.5 %.
It is widely believed in fact that mid Victorian taxes were regressive. Excise taxes played a big role and progressive income taxes did not exist. Household rates (property taxes) used after 1870 were also regressive.

Next we must consider the extra costs of intervention. These were assumed away in the above model. Extra Costs include the formal “excess burden” in public finance theory. This is the burden of distortion in the allocation of resources when other than lump sum taxes are used; taxes can have disincentive or "wrong" incentive effects. In addition it seems strongly arguable that there were extra burdens in the form of costs of the growing bureaucracy and also in the welfare costs of reduced competition between schools. Only if there is a peculiar and uniquely superior quality in government schools, and a quality that is sufficiently valuable, could all those costs be outweighed.

We have worked on the assumption of a given kind of subsidy, the “subsidy in kind.” This is the post 1870 kind, the "free" board school provision. Things were not in fact so clear cut in the first few years because board schools continued charging some fees for quite a time. Moreover the older schools enjoying the pre 1870 money subsidies still dominated. The Peltzman effect is still possible however. Our previous model in Table 1 illustrates the extreme alternatives of free and public, or full cost and private. The results of the model are only modified in degree (not in direction) if we assume that an unusually low fee is charged at board schools. For instance in column 4 of Table 1 we could substitute a fee of 2 shillings for "free" provision and still get a lower national expenditure after intervention. The main requirement for this result is that the board schools have a significant differential subsidy advantage over others that they can charge lower and lower fees. We have already documented the origins of substantial financial advantages bestowed upon the board schools by

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21 Excise taxes are normally regressive largely because the poor consume a larger proportion of their income’ i.e. savings are a smaller proportion. Individual excises on luxury goods can be progressive; but these goods did not predominate among taxed commodities in the 19th century.
the education bureau soon after 1870. By 1876 this advantage was enabling Birmingham schools to set a fee as little as one penny per week.

**The Evidence: The Share of Education in the British National Income after 1870**

Histories of education invariably claim that the 1870 Act brought unprecedented progress to education. Their argument rests largely upon figures of an increased number of school places available in the public sector by the 1880's. Pauline Gregg, for instance, argues that, whereas in 1870 there was accommodation for just under 2 million compared with a requirement of 3.5 million, by 1886 the target had been passed because there were then over 5 million school places for a population of nearly 28 million. We have dealt elsewhere with the deficiencies of this kind of argument. Briefly they stem from failure to acknowledge the following five factors: First, the 2 million places in 1870 refer only to the publicly subsidized sector; second, because after 1870 the population and the national income were both growing, one would have expected an increase in private provision anyway; third, many of the "new" public sector places were simply transferred private schools that were "taken over" after 1870; fourth, the "required" 3.5 million in 1870 was based on the "impossible" target of one in six of the total population; fifth, and consistent with the last point, there was considerable excess capacity in school building by the 1880's; that is, the number of school places available was much bigger than the number of pupils taught.

Economic historians prefer, as a more reliable measure, the total current expenditure per year on the numbers actually in attendance. We shall next make such computations for England and Wales, and then compare them with similar computations for America and European countries. We shall focus upon the year 1882 because this year was sufficiently distant from 1870 to allow the new "subsidy in

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22 Ursula Hicks (1947), pp. 289-291. Excise taxes are normally regressive simply because the non wealthy consume a larger proportion of their income.

kind” system in England to have settled down; second, it was two years after universal compulsion was established; third, useful figures happen to be available in the Annual Report for 1882. Table 3 gives the 1882 school population in Voluntary and Board schools as reported to the Education Department by the Inspectors. The voluntary schools include those that were receiving the pre 1870 type “money subsidies”; the board schools were those providing the new all or nothing "subsidies in kind."

The table also includes the cost of maintenance of the schools, i.e., salaries of teachers, books, repairs of buildings and furniture, lighting and heating. These figures underestimate the costs because they exclude interest charges. The 1882 Annual Report indicates that (p. 29) interest payments paid on loans came to about one fifth of the costs shown in Table 3. Strictly it is necessary also to impute interest on capital owned by the school board. In 1882 this would not have been large. To cover this point we shall assume that interest (paid out and imputed) accounted for one-fourth of the costs shown in the table. This would bring the annual costs for board schools up to about £2"12s. The voluntary school costs similarly adjusted come to about £2” 3s ” 3d. If we multiply these revised costs by the attendance number of Table 1 we arrive at a total cost of £2,457,601 for board schools and £4,476,202 for voluntary schools, a total of £6,933,803.

The non inspected school population can be calculated after estimating the total school population. This was about 2.5 million in 1858 according to the Newcastle Commission.

**TABLE 3: School Population and Costs in 1882**

<table>
<thead>
<tr>
<th></th>
<th>Voluntary schools</th>
<th>Board schools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average attendance:</strong></td>
<td>2,069,920</td>
<td>945,231</td>
</tr>
<tr>
<td><strong>School costs:</strong></td>
<td>£1”14” 6.75</td>
<td>£2” 1&quot; 6.5</td>
</tr>
</tbody>
</table>

Source: Annual Report for 1882, Tables 2 and 3.
The corresponding figure in 1882 would be 3,473,583 if we adjust according to the 37% increase of 5-14 year olds by that year. If we now deduct the Voluntary and Board school population in 1882 (see Table 3), we have a remainder of 458,432 in the non-inspected schools. The question now arises how to adjust this figure to allow for the 40% increase in per capita real income between 1858 and 1882? We shall assume that half this increase expressed itself in increased length of schooling and the other half by increased expenditures (unity income elasticity is also assumed). Our independent school population figure consequently needs to be raised by 20%. This gives 550,118, a figure that is reasonably in accord with the Department's belief that the non-inspected independents were one seventh of the whole (one seventh implies a figure of almost 500,000).

Estimates of the costs of the independent schools can be made from the data on the fees of the “superior” and other independent schools published around 1840 by local Statistical Societies. After allowing for increased expenditure and prices after 1840 we estimate the average annual cost in 1882 to be about £3---12s. This implies an aggregate independent school expenditure of nearly £2M. This brings the grand total expenditure to £8,933,803.

We must still add something for Sunday schools. Although these had passed their "peak" we shall assume that every day scholar attended Sunday School. If we value this schooling on the same basis as our estimate for 1833 we obtain a generous figure of about £1M. This brings the total expenditure on primary education up to about £10M. The gross national income of 1882 was approximately £1,074M.

If, as in our 1833 estimate we deduct Scotland’s share we have £940M for England and Wales. Our estimate of £10 million educational expenditure consequently reaches

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24 E.G. West, (1970b)
a proportion of 1.06 of the 1882 national income. This is bigger than Albert Fishlow's estimate for the U.K. in 1880 of 0.9%, but quite consistent with it. The difference is because our figure refers to England and Wales only and it includes Sunday Schools.
Applying our same methods for the year 1858, we arrive at a figure of 1.10% of gross national income. For the year 1833 we have previously obtained a figure of 1% of national income.

**TABLE 4: Share of Education in 19th-Century National Incomes: An International Comparison**

<table>
<thead>
<tr>
<th>(1) Prevailing policy towards school control, attendance</th>
<th>(2) GNP per capita current dollars (1890-99) = 100</th>
<th>(3) Share of educational expenditure in GNP</th>
<th>(4) = Col.4 divided by share of children in the population</th>
</tr>
</thead>
<tbody>
<tr>
<td>England and Wales 1833: Completely private, i.e. no government subsidy. Fee paying. No compulsion</td>
<td>$104</td>
<td>$84</td>
<td>1%</td>
</tr>
<tr>
<td>England and Wales 1858: Predominantly private and church aided; but some schools subsidised and inspected. No compulsion.</td>
<td>$134</td>
<td>$108</td>
<td>1.1%</td>
</tr>
<tr>
<td>England and One third of pupils in board</td>
<td>$174</td>
<td>$151</td>
<td>1.06%</td>
</tr>
</tbody>
</table>

27 Our 1858 estimate is derived from school figures from the Newcastle Report for that year. The population figures and national income estimates were taken from Mitchell and Dean (1962).
28 E.G. West (1970b), pp. 87
29 Sources:
Where the per capita calculation was not available it was estimated with the relevant population census. All dates, pounds converted to dollars at one to five marks at four to one, francs and lire at five to one. (These ratios correspond approximately to the exchanges reported in the Economist over this period.)
Estimates for GNP at constant prices were based on GNP deflators in E. H. Phelps Brown and Margaret Browne *A Century of Pay* (1968). The figure for England in 1833 was obtained with a combination of wage and price indices in B. R. Mitchell and Phyllis Dean. *op cit.*
Share of Education in national income: England and Wales: 1833, 1858, 1882, as stated in the text. United States, France, and Germany: Albert Fishlow, *Levels of Nineteenth Century American Investment in Education*; *Jnl of Economic History,* 1967 p. 432. Italy: Vera Zamagni *op cit., Table 3.* Figures reduced by the figure for education 'superiori' to leave Elementarie and Secondarie.
<table>
<thead>
<tr>
<th></th>
<th>Wales 1882</th>
<th>United States 1860</th>
<th>United States 1880</th>
<th>United States 1900</th>
<th>France 1860</th>
<th>France 1880</th>
<th>France 1900</th>
<th>Germany 1860</th>
<th>Germany 1880</th>
<th>Germany 1900</th>
<th>Italy 1883</th>
<th>Italy 1898</th>
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<tbody>
<tr>
<td></td>
<td>schools.</td>
<td>Common School</td>
<td>Fees largely</td>
<td>Compulsory and</td>
<td>Centralised,</td>
<td>Big public</td>
<td>$156</td>
<td>$100</td>
<td>$120</td>
<td>$138</td>
<td>$81</td>
<td>$86</td>
</tr>
<tr>
<td></td>
<td>Compulsion. Fees</td>
<td>system</td>
<td>abolished. About</td>
<td>free nearly</td>
<td>compulsory and free</td>
<td>effort after the war</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>much reduced in</td>
<td>predominantly</td>
<td>half the states</td>
<td>everywhere.</td>
<td>and free</td>
<td>defeat of 1870</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>board schools</td>
<td>local finance. Fees</td>
<td>have compulsion.</td>
<td>Increasing</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>a significant</td>
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<td>centralisation.</td>
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<td>element in several</td>
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<td>states. Typically</td>
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<td></td>
<td></td>
<td>little compulsion.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$147</td>
<td>$137</td>
<td>0.8%</td>
<td>3.2%</td>
<td>$186</td>
<td>$159</td>
<td>1.1%</td>
<td>4.53%</td>
<td>$204</td>
<td>$202</td>
<td>1.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$186</td>
<td>$159</td>
<td>1.1%</td>
<td>4.53%</td>
<td>$186</td>
<td>$159</td>
<td>1.1%</td>
<td>4.53%</td>
<td>$204</td>
<td>$202</td>
<td>1.7%</td>
</tr>
</tbody>
</table>
Judged on such a basis, therefore, the 1870 legislation had brought no progress by 1882. Certainly our estimates have included several approximations and there may be room for some further discussion of the calculations. If education was a "Strongly superior good," its income elasticity of demand would have been above unity. This means that for every one per cent increase in private income the private increase in educational expenditure demanded would have been more than 1%. If we assume this then even if the share of education in GNP remained constant between 1858 and 1882, the 1870 legislation would have reduced the amount of money going into it compared with what private expenditure without legislation would have attained. Clearly much depends upon the facts about income elasticities in the nineteenth century.

Some rough estimates of elasticities in England and other countries may be obtained from Table 4, and Fig. 1 which plots columns 3 and 5. The evidence in this table suggests that England and Wales had an income elasticity of just about unity between 1833 and 1858. A useful comparison after that might be obtained from other countries as their incomes, (column 3) increased above $108 per capita (the English level of 1858). Judged on the figures alone the income elasticities for continental countries are very high indeed. Most of the increased educational expenditure in these countries however was government sponsored. This makes it difficult to distinguish private preference from bureau pressure. For America we do have a separate measure of private expenditures (in Albert Fishlow's article, op cit., column 3 minus column 2 in his Table 1). Between 1860 and 1880 private expenditure increased by about 66% and the income over the same period increased by 26.5%. This indicates an income elasticity of over 2. As a qualification we should note that such a figure becomes less representative if the lower the proportion of private sector total education. In 1860 and 1880 in America it was 43% and 23%, respectively.

30 It is debatable whether the costs of the central administration of the public system in 1882 should be included in a comparison with the almost completely private system of 1833. We have omitted them. The School Board administration of 1882 cost about $4M. No substantial adjustment is required on account of changes in the population structure. The share of the 10-14 year olds in the total population was .229 in 1840—.222 in 1860, and .229 in 1880.
Table 4 also affords a new comparison of 19th-century "effort" at similar rates of per capita income. Column 5 also adjusts for population structure. It is assumed that out of two countries with the same ratio of education to GNP the one with the smaller proportion of children in its population is making the biggest educational effort. Column 5 accordingly divides the share in GNP with the share of children in the population. This is equivalent to expenditures per child divided by GNP per capita. The first striking fact from Table 4 is that, at per capita constant dollar incomes at or below $100, England’s performance was over twice as good as that of France, and better than that of Germany. This means that the share of education in GNP in the "industrial revolution year" of 1833 in England and Wales was greater than that of industrialising Germany in 1860 and very much better than that of France in 1860. This is all the more interesting in view of the absence of English government intervention (see column 1) compared with the newly established public systems in the European countries.

Second, there is a modest improvement in England’s effort by 1858, and this is accompanied by the system of "money subsidies" first introduced in 1833. England’s effort in 1858 relates to an income of $134. America did not approach this effort until she had an income of $186 (in 1880). On the other hand at income levels similar to England in 1858 ($130-140 per capita), France caught up in education achievement, (in 1880) and Germany was considerably in advance (in 1890).

These results seem consistent with Niskanen’s theory of bureaucracy. Because the continental countries by the mid 19th century had mature bureaucracies and England did not, the theory would predict that the former would have a greater expansion. Although the expenditures were higher in these countries, marginal net benefits would have been smaller; that is, the marginal value would have been less than the marginal cost. Niskanen concludes that a full bureau will supply up to twice that of a competitive

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31 The Italian performance seems impressive. It is likely however that measurement of Italian national incomes is the least accurate since there is a higher element of domestic agricultural production that was not included; and a higher national income would reduce the Italian achievement figures in columns 3 and 4.
industry faced with the same demand and cost functions.\[32\] This suggests that we can, at one extreme, discount the “bureau effect” by dividing the observed figures by two. If we do this for Germany in 1900, the educational effort figure of 8.75 (fourth column Table 4) becomes 4.375. This is not far off the figure of 4.63 for England in 1882. Bearing in mind that her per capita income in that year was 26% bigger than Germany’s of 1900, and also that we are applying Niskanen’s most extreme prediction, these results would appear to strengthen the impression that by 1882 England had fallen behind the potential of her pre 1870 system. This belief of course is also prompted by the drop from 4.95 to 4.63 in the English ratios between 1858 and 1882 (fourth column).

It may be asked why the “Peltzman effect” does not also show up in the case of America. In several states in 1960 the charging of parental fees (rate bills) was certainly a feature of the common school system. There was also a significant tradition of private schooling. Between 1860 and 1880 most of the common schools became “free.” (In New York State for instance fees were abolished in 1867.) This event would present many families with the same opportunity cost that was described earlier when England introduced the all or nothing "subsidy in kind" in 1870. On similar application of the displacement hypothesis it would have been rational for many American families to have switched to public education even where this was of somewhat lower resource value to the one they were accustomed. One answer is that already in 1860 the relatively homogeneous common schools were accounting for 57% of education. In England in 1860 government aid accounted for less than 33%, and this was distributed largely to the more heterogeneous private and parochial schools. England’s public intervention in other words was still one of “money subsidies.” It was the sudden change from this system to one of “common schools” after 1870 that probably induced the “Peltzman effect.” Another answer could be that in America there was a substantial switching by

\[32\] In the diagram below suppose BG is a consumer demand curve for education. At constant costs OA a competitive industry would supply OD. This yields a consumer’s surplus of ABC. When this industry is collectivized BG translates into a taxpayer's demand curve as expressed through his representative. A monopoly bureau may now be able to force an "all or nothing" supply of OE which is twice OD. The earlier consumer's surplus ABC is now completely offset by CM Factor surpluses will exist when AF is upward sloping. Since they will increase after bureau operation, factor suppliers will share a common interest with it.
the middle class from private to public (as in the Peltzman theory), but that this was just offset by the increase in the education of low income groups. On this reasoning, other things equal, although there would be positive growth in the share of education in GNP it would be at lower levels and rates than those in continental Europe where, the private school base was much smaller. This prediction is indeed supported by the figures and is illustrated best in Fig. 1. In this diagram the U.S. curve lies below those of the continental countries and also reveals a slower growth rate in the earlier years. These differentials are also explainable by Niskanen's theory on the grounds that the American system consisted of dispersed local bureaucracies that could have experienced significant competition between districts. The full "Niskanen effect," in contrast, relates to centralized (full monopoly) bureaus; and these were approached much more in Europe.33

Suppose further research reveals an underestimate in our figures for England and Wales, such that the 1882 effort was above that of 1858. Provided the upward adjustment was not above point C in Fig. 1, a Peltzman effect could still have operated. The dotted line from 1858 to point C is a "counterfactual boundary" showing how much growth would have taken place without the 1870 Act but with the continuation of the pre 1870 money subsidy system, (assuming we could reasonably make a simple extrapolation of the 1833-1858 growth curve). Any vertical distance between C and a Forster Act "effort point" below it would be a measure of slowdown. To reach the "modest" point C (which "breaks even") we estimate that we would require a figure of £12.7M total expenditure for 1882. This is £2.7M more than our estimate of £10M, or an error of underestimate of 27%. Assuming the Department figures for Board Schools, Voluntary Schools, and Independent School population to be correct, most of the burden of such an error would fall on our estimate of independent school costs. Only if these costs were two and one third bigger than our estimates would the Forster Act have just maintained the pre 1870 projection. At this

33 D. McCloskey (1970)
rate the expenditure on non-inspected schools would have to be raised to £4.7M which is bigger than the figure for voluntary schools and twice that for the Board schools. We know of no historian who has suggested figures that come anywhere near this magnitude.

In Peltzman's model of "in kind" subsidies the direction of expenditure on the education of the poor is always positive. The degree of additional spending on the poor however, depends upon the amount of switching into "free" education by the middle class. It might be tempting to argue that because the marginal social rate of return was greater for poorer than for richer individuals, the Peltzman effect in 19th-century England might have been deliberately planned as an efficiency measure. With more going to the poor and less to the middle income groups the switch to "free" state schools could have raised the GNP. We shall call this the -social engineer's argument." Its logic is questionable. First, nothing is said about the tax source of the subsidy; regressive tax sources could have made a big difference to the argument. Second, if a switch of emphasis towards the poor was required, one should ask whether the pre 1870 method could not have accomplished it at less cost. It can easily be shown that it could. In terms of Table 1, if instead of a 'free' education worth 12.5 shillings a flat subsidy of 5 shillings were given for the schooling of the low and middle groups, expenditure on the poor would expand to 15 shillings and total public expenditure would fall by 60%. And any system of means tests applied to the pre 1870 system would have stopped the "leakage" to the middle class and allowed more for the poor. We still need an explanation therefore why the change in the method of intervention occurred. In the absence of a better one, the theory of bureaucracy seems acceptable.

Another and even more important objection to the "social engineer's" argument is that it implicitly contains a "dictator" model of government. In it the "dictator" (planner) uses coercion with the single-minded aim of raising GNP. This however does not conform to reality. In a democratic society policy is geared, not to the wishes
of a "dictator," but to those of the median voter. Policies that do not meet his preferences will not be adopted because they will fail to obtain a majority. The median voter's attitude to policy will depend on the tax "prices" he will have to contribute. We have seen that progressive income taxes were not operative in the 19th century. If we assume proportional taxes then the median voter expects to pay his full share, just as he does when he purchases through the market. Let us also make the usual assumption that demand for education is a positive function of income. Consider next the fact that because of the usual way that income distribution is skewed the median voter’s income is less than the mean income. It follows that when education is collectivised through the political process there will be less total expenditure on it than previously. This is the initial effect before the growth of a full bureaucracy. When the latter eventually matures the “Niskanen effect” operates in the opposite direction.

This extra model of the "economics of politics" provides an additional potential explanation of our post 1870 data on English education. It is a general explanation that could well complement the others. On its own however it would seem to be insufficient to explain why the post 1870 “in kind” subsidy method was adopted; only that once a collectivised and "free" education was adopted the proportion of expenditure to the GNP would decline. The bureau strategy that we have documented seems a much more persuasive explanation of the switch in methods of intervention. And in a democracy the bureau, as well as the median voter, has crucial influence in outcomes. Moreover as the bureaucracy eventually reaches full monopoly powers it is able freely to encroach upon the median voter’s consumer surplus and cause him to pay more than he would on the market (see footnote 31). In England this latter became a 20th-century not a 19th-century phenomenon. In 1882 the public sector accounted for not more than one half of total expenditure. There remained therefore much scope for the operation of the Peltzman effect. There was much “ruin”
left in the private sector; and it was this "ruin" that seems to have been the main reason why the strong public sector growth did not mean strong national growth.

The above interpretation of 19th-century educational events has interesting implications for the debate about the late Victorian economic slowdown. Several historians have attempted to link this slowdown with an educational "failure" commonly associated with the years prior to the 1870 Act. The latest view on the economic "climacteric" by E. Phelps Brown and Margaret H. Browne (op cit.), and Donald McCloskey places it around 1900, much later than was originally believed. As McCloskey's analysis concludes: "The case for a late Victorian failure in productivity, then, appears weak. Indeed the failure, to be precise, was Edwardian.” It is interesting to observe what happens now to the thesis that economic failure was linked to educational failure. Most Edwardian workers received their schooling after Forster’s Act of 1870. Our analysis indicates that the same Act, appears to have slowed down the growth of education for the rest of the century. For those who accept both the assumption that education is a cause of growth and the belief that the economic slowdown occurred around 1900, our findings may help to supply a missing link. Conversely those who are still requiring more empirical evidence that education and growth are linked may now be somewhat more persuaded; and more especially since, on our estimates, education as a share of national income in England during the industrial revolution (in 1833) exceeded that of Germany at similar (or higher) per capita incomes later in the century.

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