Centre for Policy Studies

STANDARDS AND SPENDING

DISPELLING THE SPENDING ORTHODOXY

John Marks

THE AUTHOR

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SUMMARY

What's a thousand dollars? Mere chicken feed. A poultry matter.

Groucho Marx

The state should spend more of our money on education. Virtually every politician agrees with that statement. Anyone who questions this political orthodoxy risks being called a heretic – or worse.

Some may wish to parody this pamphlet as a call for sudden cuts in education spending. It is no such thing. Indeed, there may well be some elements of the education budget where more money might have a direct result on standards (improving head teachers pay, coping with the difficulties of attracting teachers to schools in areas of high housing costs etc.). This paper merely questions the dogma that higher overall spending will inevitably translate into better standards. Our findings suggest that the Government should consider how the existing budget might deliver better value for money and a higher quality of schooling before it spends billions more pounds of taxpayers' money on state education.

The Government's education budget is set to rise from £38.8 billion in 2000/01 to £49.2 billion in 2003/4. And in its 2001 General Election Manifesto, the Conservatives promised that "we plan to spend what the Government has planned". But what has made politicians of all parties think that higher public spending will *inevitably* result in higher academic standards? To answer that, we need to consider four further questions.

FOUR QUESTIONS

Has spending more resulted in higher standards over time?
There is no evidence to prove this correlation, but much to suggest that standards of the exams themselves have not been maintained.

Do high-spending Local Authorities with smaller classes achieve better academic results than low spending authorities with larger classes?
Schools in high spending local education authorities with smaller class sizes achieve lower standards at both the primary and secondary level. And value for money (how much a good grade costs) varies enormously from LEA to LEA – by a factor of three in primary schools and six in secondary schools.

Do independent schools provide excellent value for money in terms of academic results?
Independent day schools achieve better results, on average, than state schools. In raw terms, however, our research suggests they provide less value for money than those state schools with sixth forms because their costs per pupil are so much higher.

If we spent as much as other countries do on education, would our performance match theirs?
International comparisons suggest that there is no strong correlation between level of spending and academic results. Standards in maths in both primary and secondary schools increase with higher pupil/teacher ratios (that is with larger class sizes) and decrease when a higher proportion of the GDP is spent on state-provided education.

In other words, the orthodoxy is, quite simply, wrong.

CHAPTER ONE
HAS SPENDING MORE RESULTED IN HIGHER STANDARDS?

Yesterday I couldn't spell engineer. Now I are one.

Graffiti

At first glance, the graph overleaf would support the orthodoxy that higher public spending has resulted in higher education standards.

Over the last 40 years, spending on education has risen by three times in real terms.

It shows that spending on education has roughly tripled, in real terms, over the last 40 years. It also shows that the educational performance of 16 year olds has risen. Does this support the idea that more money means better grades?

The correlation is less than clear. In the 1960s it shows a steady increase in the percentage of 16 year olds achieving good results; [1] from the 1970s it levels off; and then from 1987 onwards it rises extremely rapidly. This is a different pattern to the data on funding. What factors, other than funding, might explain this trend?

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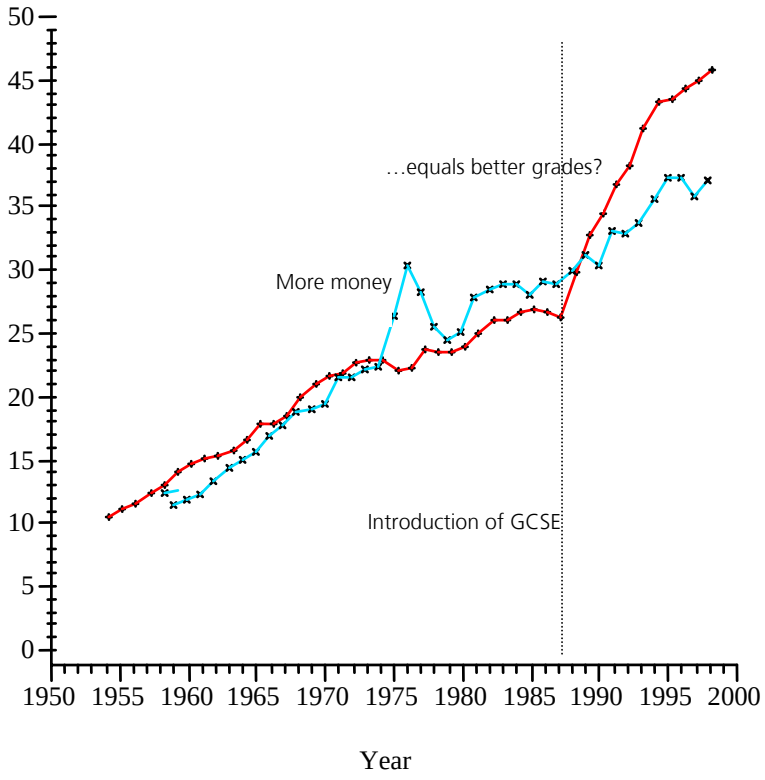
[1] Throughout this report, "good results" are defined as achieving five or more grades between A* and C at GCSE or the equivalent.

FIGURE 1

MORE MONEY, BETTER GRADES?



Note: The vertical axis shows both the percentage of 16 year olds achieving five or more GCSEs (or equivalents)[2] at grades A* to C (%5A*C) and total education spending in £ billions in real terms (1998 pounds). The black line represents the grades achieved, the grey line the money spent. Thus, in 1976, education expenditure totalled £31 billion and 23% of children achieved the equivalent of at least five good GCSE grades. Data for England only.

OTHER FACTORS

- The abolition of grammar schools in the 1970s. Good examination results at A-Level and at 16+ levelled off after 1970, as more and more grammar schools were turned into comprehensives. A similar levelling took place in Wales but, significantly, not in Northern Ireland, which retained a selective state system.
- More pupils staying on longer at school, particularly after the raising of the school-leaving age in 1973.
- The rise in the number of girls succeeding in examinations from a lower base in the 1950s – results for girls now exceed those for boys.

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[2] The equivalent to a GCSE at grace A* to C before 1988 were O-levels at grades A to C, and CSE grade 1.

- The growth of the CSE examination, particularly during the 1970s. This growth increased the higher grade passes since a CSE grade 1 was regarded as equivalent to an O-level higher grade pass.
- The requirement on all secondary schools to publish their public examination results, subject by subject and grade by grade, since 1980.
- The publication by the government of National Performance tables for both GCSE and A-level results, also school by school, since 1992.

Some of these factors could reasonably have been expected to lead to an increase – and taken together – to a substantial but gradual increase in the proportion of pupils passing public examinations.

But none of them should have given rise to the levelling off in examination results seen in England in the 1970s which was totally unexpected (as the annual projections published by the DES until 1968 make clear.) Nor do any of these factors provide a plausible explanation for the abrupt rise in public examination results which started in 1987/8.

Is the recent improvement in exam results linked to the introduction of a different type of exam?

For that was the year the GCSE was introduced. And so the question is whether the recent "rise in standards" was linked to a different type of examination, and had little or nothing to do with the level of spending.

STANDARDS

Many parents feel that today's GCSEs are easier than the O-levels they took in the 1950s, 60s and 70s. But politicians tell them not to worry – "your children are brighter", ministers say "so stop insulting their achievements".

In the early 1990s, however, concerns about the standards of public examinations led to an official enquiry into Standards Over Time, which was conducted jointly by Ofsted and SCAA.

The final report of the Standards Over Time enquiry[3] has been misrepresented by many in education on the basis of one paragraph which states that:

> ...there is insufficient evidence available to enable firm conclusions to be drawn about some aspects of grade standards going back more than 10 years at 18+ or five years at 16+.

This lack of evidence was due to the failure of the Examination Boards to keep scripts even over the changeover period from O-level/CSE to GCSE – an extraordinary omission.

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[3] *Standards in Public Examinations 1975-1995: A Report on English Mathematics and Chemistry Examinations Over Time*, SCAA and OFSTED, 1996.

This one paragraph, it is argued, shows that standards have been maintained. In fact, a careful reading of the report shows that there is considerable cause for concern. In particular:

- the specific points raised about the reduced content of each of the three subjects studied – English, Mathematics and Chemistry. These included:
  - in Mathematics, substantially less emphasis on basic arithmetic, on algebra, and on proof in algebra and geometry;
  - in Chemistry, a reduction in the knowledge of chemical reactions and in the construction of balanced chemical equations;
  - and in English, a research report which found "that candidates awarded a given GCE grade in 1980 were more capable of writing accurately than their counterparts in 1994."[4]
- the need for restrictions on the use of calculators, formulae sheets and other external aids, such as open book examinations and pre-release materials, in examinations;
- the reduction in the standard and demand of questions (especially in Mathematics and Chemistry) by dividing multi-step questions into parts and giving hints on how to solve problems;
- the possibility of grade drift from year to year leading, over a number of years, to significant grade inflation.

At A-level there are some further concerns:

- the comparability of linear and modular A-levels, particularly now that linear A-levels in their traditional form are unlikely to continue to exist;
- the specific issue of modular grade review which prevents the whole of a borderline candidate's work from being considered;
- serious concerns about the standard and demand of questions, which was also stressed by an unpublished Question Paper Review conducted by SCAA in 1996;
- problems with the A-level Code of Practice which in 1997 did not correspond with what the Boards were actually doing.

All of these factors gradually lower standards. If they are not tackled vigorously, they are likely to continue to lower what is expected of pupils in an unacceptable way.

The overall conclusion is that in a number of significant respects standards have not been maintained either at 16+ or at 18+ in all the subjects which have been considered.

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[4] A Massey & G Elliott, *Aspects of Writing in 16+ English Examinations between 1980 & 1994*, University of Cambridge Local Examinations Syndicate, Cambridge, 1996.

GRADE INFLATION IN GCSE AND A-LEVEL

There are clear trends in the annual rates of increase for the percentage of pupils obtaining good grades in GCSE (or equivalent) and the percentage of pupils obtaining 2 or more A-levels over the period from the mid 1950s to the 1990s.

There was a rapid annual rise in both percentages from the mid 1950s up to about 1970. This was followed by a virtual stand-still for six years or so – which coincided with the rapid changeover to comprehensive schools from a system of grammar, technical and secondary modern schools. From the mid 1970s onwards, the rate of increase was around 1%, again for both GCSE and A-level. But from 1987 to 1994, the annual rate of increase was 7.3% for GCSE and over 5% for A-level. Since 1994 the annual rate of increase has been around 1.5% for GCSE and about 1% for A-level.

It is hard to escape the conclusion that the value of an exam grade has been devalued.

GRADE DRIFT

The Standards Over Time report identified the possibility of a limited drift in pupils' grades from year to year. This was caused by the natural tendency to give candidates the benefit of the doubt in borderline cases. If this is a universal phenomenon, it could possibly account for an increase of around 0.75% per year. But such a relatively small change does not explain the period of extremely rapid growth in the percentages from the mid 1950s onwards and from 1987 to 1994.

For the first period it seems likely that the increase is a real one, since this was the period when many more pupils were staying on longer (especially girls), and when the tripartite system set up in the wake of the 1944 Education Act was beginning to bear fruit.

However, there are no similar factors which would account for the even more rapid increases which took place from 1987 to 1994. The only plausible explanation for these is that the new GCSE examinations – and the revised A-level examinations which followed in their train some two years latter – were substantially less demanding than their predecessor A-level and O-level examinations.

THE RISE OF THE "SOFT OPTION"

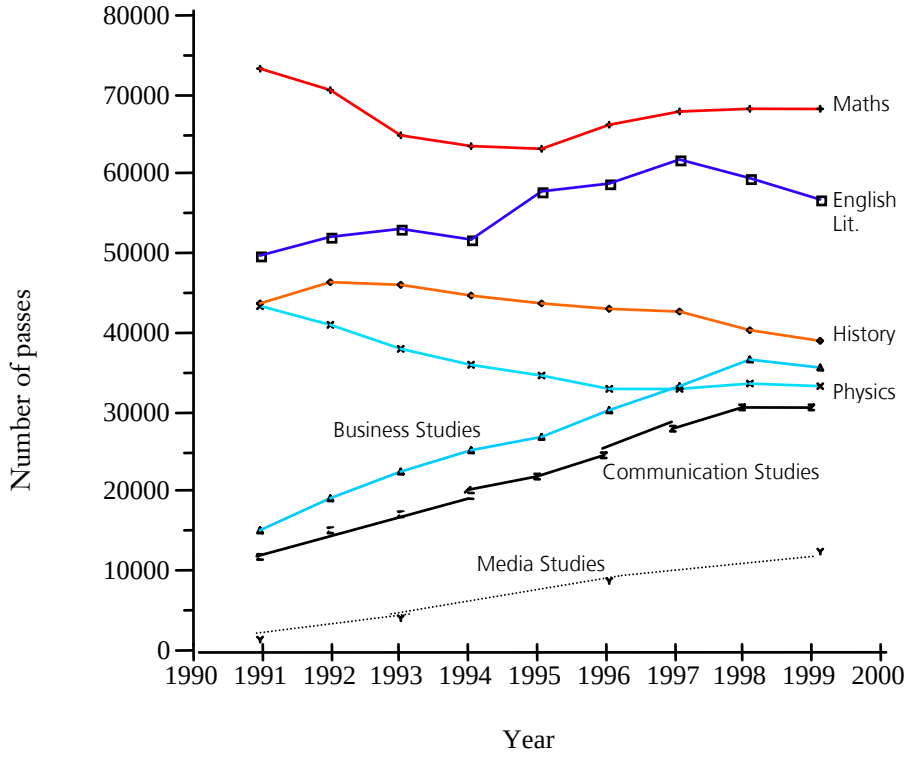
Education, we are told, must be "relevant" to the modern world. In the quest for "relevance", modern subjects – such as "media studies" or "communication studies" – are beginning to replace more traditional subjects.

Figure 2 shows the numbers of pupils passing A-levels over the last decade in mathematics, physics, English literature, history, business studies, media studies and communication studies.

It shows that the number of passes for mathematics has fallen from about 74,000 to 68,000 while the number passing physics has fallen even more steeply, from nearly 44,000 down to 33,000. The history passes have also declined, from about 47,000 to under 40,000. The only major subject to have shown a rise is English literature from about 50,000 to nearly 57,000.

FIGURE 2

EASIER SUBJECTS?



The rapid growth in A-level students over the decade has been in the newer subjects such as business studies – from 15,000 to 35,000; communication studies – from 10,000 to 25,000; and media studies – from about 1,000 to over 13,000. The country is now producing more A-level passes in business studies, communication studies and media studies together than in physics or history.

There are now more A-level passes in business studies, communication studies and media studies than in physics or history.

EXAMINERS FAIL THE EXAMS

Some examiners are, at last, admitting that exams are losing their value. Last summer, former Chief Examiner Tony Whelpton wrote in a letter to *The Times*[5]:

> Yes, it is easier to get a good grade at A-level and at GCSE than itused to be… This essentially is what Paul Sokoloff, the examination boards' convener, seems to me to be saying in heavily coded language. I know of few people who have been involved in the public examination system at a high level for a long time who would disagree. So why not say so?

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5 *The Times*, 20 August 2001.

A few days later, Jeffrey Robinson, a former senior examiner for the Oxford, Cambridge and RSA Examinations board (OCR), blew the whistle on the GCSE. He said that improving GCSE grades are the result of systematic lowering of pass marks, not pupils' hard work, intelligence or the quality of teaching:

> It's the pass marks that are being lowered a little bit each year it seems, and now they are about 25% below what they were 12 years ago. People can now get a grade C without knowing any algebra at all. Basic things like percentages are almost beyond them. Those who just creep on to a C-grade really know very little maths.[6]

He said that to obtain a grade C in a maths paper sat in 1989, pupils would have had to have gained 65% – but in 2000 that level had dropped to 45%. For pupils taking papers with the most difficult questions, the drop has been even more dramatic – from 48% in 1989 to 18% in 2000.

> The percentage of passes at grade C or better has more than doubled, from about 25% in 1985 to about 55% in 2000. It has continued this year and shows no sign of stopping. Yet from 1950 to 1985, with the old O-level and CSE, the percentage hardly changed – just a slight rise, from about 22% to 25%… If you took GCSE or O-level 10 or more years ago and obtained (say) a grade D, you could be confident that the same performance today would be given a grade B.[7]

Predictably, the examining boards rounded on Mr Robinson. One argument they used was to compare the GCSE to running the four minute mile. The Chief Executive of the OCR claimde that:

> Nearly 50 years ago only one person ran the mile in under four minutes. Today, nearly all serious milers can do so – but the mile is still a mile.[8]

But Mr Robinson's point is that the GCSE of 2001 is no longer the GCSE of 1989, still less the O-level of (say) 1980.

Mr Robinson has since been sacked from his other role as examiner with OCR's international arm, Cambridge International Examinations. Ironically, in the same week that he was dismissed, the *Times Educational Supplement* reported that the Government's exam watchdog, the QCA, was about to publish a report showing that standards in German and physics GCSE have slipped.[9]

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6 BBC Online, 23 August 2001.
7 *Evening Standard*, 23 August 2001.
8 BBC Online, 23 August 2001.
9 *Times Educational Supplement*, 26 October 2001.

EVIDENCE FROM THE WORKPLACE

However much Ministers might claim that exams have not become easier, they cannot hide the legions of people who have been failed by British education, catalogued by the Government's own reports.

For example, the recent Skills Task Force report[10] revealed the significant weaknesses in the most basic vocational skills among British adults. The "success" of tripling education spending has resulted in the following:

- Seven million adults in Britain are functionally illiterate. One in five adults, if given the alphabetical index to the Yellow Pages, cannot locate the page reference for 'plumbers'. They "are below the standard norm expected of 11 year olds".
- Problems with numeracy are believed to be even worse: nearly half of all adults in Britain have numeracy skills below the level expected for an eleven-year-old.
- One in four adults cannot calculate the change they should get from £2 when they buy one item for 68p and two more at 45p. Another survey found that, when asked to work out the area of a room that was 21 ft by 14 ft, a third of all adults gave the wrong answer, even though they were given calculators to do the sum.

Seven million adults in Britain are functionally illiterate. One in five adults cannot locate the reference for plumbers in the Yellow Pages.

FAILING THE BASICS

Although the Qualifications and Curriculum Authority (QCA) claims that Labour's much-vaunted literacy strategy is improving standards from the bottom up, the results of English tests for 11 year olds reveal just how much "improvement" is necessary.

When asked how to spell the following words, 600,000 11 year olds fared as follows:

---

[10] *Skills for All: Proposals for a National Skills Agenda* – Final Report of the National Skills Task Force, DfEE, July 2000.

TABLE ONE: A SPELLING TEST

	% of 11 year olds spelling word incorrectly
Environment	82%
Necessary	82%
Extremely	80%
Pollution	62%
Pierce	59%
Structures	50%
Passenger	44%
Expensive	41%
Century	40%
Preserve	40%
Gleaming	38%
Generation	37%
Foundations	33%
Difficult	32%
Importantly	29%
Complete	28%
Castles	25%
Weight	25%
Climbing	21%
First	8%

Source: *Standards and Evaluation Reports 1999-2000*, QCA, January 2001.

The state's efforts to teach young people about our nation's history is also lamentable. A snapshot survey[11] of 200 youngsters found that:

- One in six could not identify Winston Churchill as Britain's wartime Prime Minister, with 4% naming Adolf Hitler and 3% Margaret Thatcher instead.

Two out of three children did not know when the First World War was fought.

- Two out of three did not know when World War One was fought, with nearly a quarter being unable to place it in the right century.
- Half of those surveyed did not know that Oliver Cromwell was a key figure in the English Civil War. One in six, including a quarter of sixth formers, thought he was involved in the Battle of Hastings.
- 40% did not know how many wives Henry VIII had.
- A third did not know who Harold was fighting at the Battle of Hastings.

This was a snapshot survey. But if, as it suggests, children are not learning these basic facts, what are they being taught?

When it studied students' performance in mathematics, the Government's National Skills Task Force found the following:

> Just 45% of young people gain a grade C in mathematics at age 15. Our supply of people who choose to develop mathematics

[11] Survey conducted on behalf of Osprey Publishing, January 2001.

skills beyond this modest level is very much smaller – less than 10% of 18 year olds gained A-level mathematics in 1998. While international comparisons are difficult due to the variety of qualifications systems which are used in different countries, there is evidence that this compares poorly internationally. In the latest years for which data is available, 16% of young people in France and 27% in Germany gained levels of mathematics skills equivalent to A-level. Our shortage of mathematics skills is underpinned by the low levels of numeracy of 25% of young people and adults highlighted in the earlier section on basic skills.

It is not surprising therefore that at the highest levels there are problems in filling courses which demand a good knowledge of mathematics. There are only as many new entrants to HE (Higher Education) engineering courses now as there were in 1985 despite the rapid expansion in HE provision in this period. Only just over 1% of those gaining a first degree in 1998 gained a degree in mathematics – nearly twice as many graduated in history. This leaves us with a very limited pool of people with the technical skills demanded in a wide range of essential jobs in the economy – and, just as crucially, in teaching itself.[12]

42% of student teachers gave the wrong answer to the question: multiply 8 minutes 25 seconds by 8.

Even more disturbing is the impact that a lack of basic skills is having upon the teaching profession itself, revealed by a study of 400 trainee teachers at the University of Wales. These graduates, who were training to become primary school teachers, could not do simple mathematical calculations – despite having a GCSE pass in the subject. Here are some of the questions they were asked:

TABLE TWO: A MATHS TEST – FOR STUDENT TEACHERS

	% of student teachers giving the wrong answer
Which number is 100 times as great as 1,000?	16%
How many hundredths would I have to add to 0.2 to equal 0.3?	38%
What is an isosceles triangle?	40%
Multiply 8 minutes 25 seconds by 8	42%
Which of the following is closest to 8.93: 9.08? 8.8? or 9.7?	6%
£4.04 x 0.5 = ?	24%

Source: Sue Sanders & Heather Morris, *The Times*, 19 February 2001

Reflecting on the fact that so many of the trainees had passed GCSE maths, one of the researchers who carried out the survey said:

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[12] *Skills for All: Proposals for a National Skills Agenda* – Final Report of the National Skills Task Force, DfEE, July 2000, pp 22, 25.

> It has become obvious that a GCSE tells you nothing. You can get a grade C without being able to do long division and multiplication or anything to do with decimal fractions without a calculator.

Bizarrely, just months after this research appeared, the Education Secretary announced that trainee teachers would have unlimited chances to pass literacy and numeracy tests.[13] Until then, students could take the tests four or five times.

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[13] *Times Educational Supplement*, 15 June 2001.

CHAPTER TWO
DO (EXPENSIVE) SMALL CLASS SIZES MEAN BETTER RESULTS?

> The government solution to a problem is usually as bad as the problem.
>
> Milton Friedman (attrib.)

Data from the Audit Commission for Local Education Authorities (LEAs)[14] show that there is a wide fluctuation in performance between LEAs: the best LEAs do about half as well again as the worst LEAs in National Curriculum tests for 11 year olds. In secondary schools the percentage of pupils with good GCSE results varies from about 20% to over 60%. Can this be explained by the amount being spent on education?

There are also wide differences between the amounts LEAs spend on education.[15] In the primary sector, the costliest LEA spends nearly twice as much per pupil as the cheapest LEA; the average is about £1,740 in 1997 rising

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[14] *1999/2000 Local Authority Performance Indicators*, Audit Commission, 2001.

[15] One possible reason for this is that for many years extra money has been made available for LEAs with high levels of either social deprivation, originating in the educational priority areas advocated in the Plowden Report, or of problems with pupils whose first language is not English, for whom funding under Section 11 of the Local Government Act has been available. These two factors plus the generous level of funding provided by ILEA have meant that London boroughs, especially in inner London, have received much more generous funding than the rest of the country. What was not done was to link these generous resources with any kind of effective public accountability for the standards achieved.

to £1860 in 1999. In the secondary sector, the costliest LEA spends about 80% more per pupil than the cheapest LEA; the average is £2,330 in 1997 rising to £2,448 in 1999.

Class sizes vary too. In primary schools, one LEA has over 50% of classes with more than 30 pupils compared with only about 2% for another LEA; the average was about 25.7% in 1997 falling to 23.9% in 1999 and 18.2% in 2001.

The orthodoxy is that the more an LEA spends, and the smaller its class sizes, the better the education should be.

But the reverse is the case.

When these data are analysed in more detail they reveal further interesting and surprising correlations.

Higher standards in both primary and secondary schools are associated with lower costs per pupil and with larger primary school class sizes.[16]

High standards in both primary and secondary schools are associated with lower costs per pupil and larger primary school class sizes.

So, contrary to both general opinion and government policy, smaller class sizes are linked with lower rather than higher standards in LEA schools. Furthermore, value for money in both primary and secondary schools has decreased between 1997 and 1999.

VALUE FOR MONEY

Value for money indicators measure how much it costs to achieve a given standard of education. They can be calculated for both primary schools and secondary schools by dividing the standards achieved by the cost per pupil, again using the Audit Commission's figures.

[16] See Appendix 1 for more details.

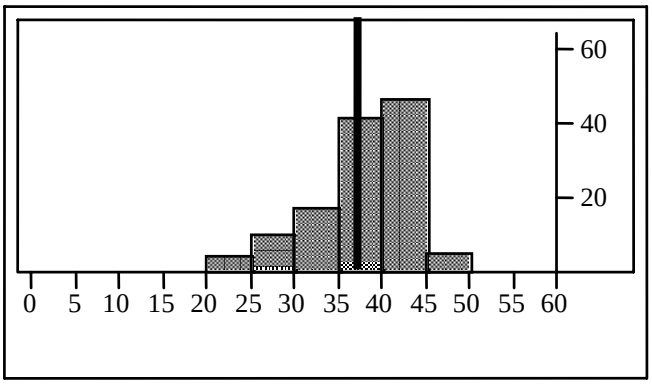
PRIMARY SCHOOLS

Figure 3 shows that the best LEAs performed about two and a half times as well as the worst LEAs in both 1997 and 1999.

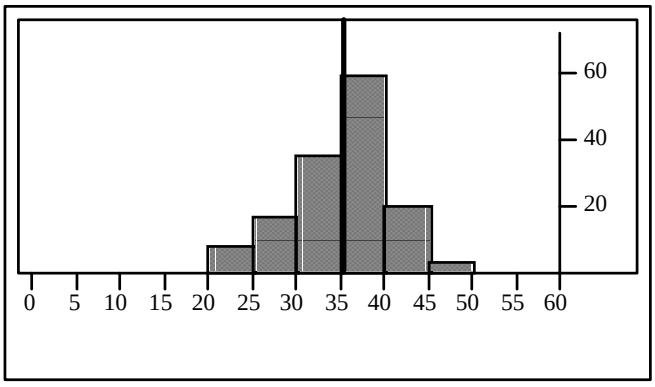
FIGURE 3

VALUE FOR MONEY IN LEA PRIMARY SCHOOLS IN 1997 & 1999

1997



1999



Note: the horizontal axis shows the average value for money (in terms of the proportion of pupils achieving level 4 in National Curriculum tests per £1,000 per pupil; the vertical axis shows the number of LEAs of schools achieving such results. The dark vertical line shows the national average.

The average value for money in primary schools has decreased by 6.4% from 37.6 to 35.2 reflecting the fact that results have gone up relatively little but funding per pupil has increased by 8%.

SECONDARY SCHOOLS

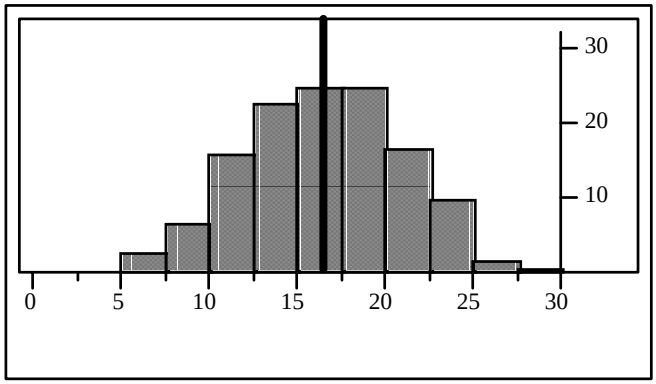
Figure 4 shows that, in 1997 and 1999, the differences in educational performance in secondary schools were about twice as great as in primary schools; the best LEAs perform about five or six times as well as the worst LEAs.

The average value for money in secondary schools (VfM/Sec) has decreased very slightly – from 16.6 to 16.4 (in units of the percentage of pupils achieving 5 or more GCSE grades A* to C (%5A*C) per £1,000 per pupil). The relative increase in good results (from 37.8 to 39.1) is slightly less than that in money spent per pupil (£2,330 to £2,448).

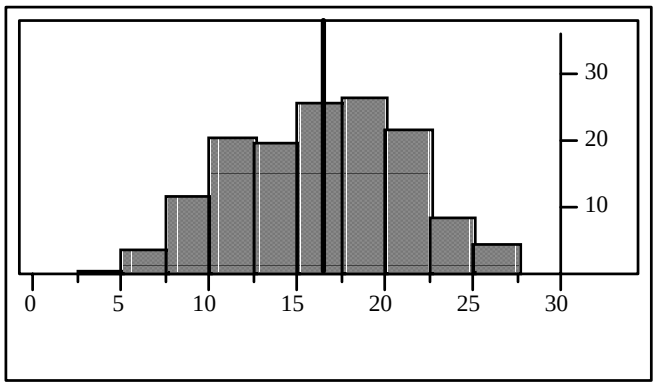
FIGURE 4

VALUE FOR MONEY IN LEA SECONDARY SCHOOLS IN 1997 & 1999

1997



1999



Note: the horizontal axis shows the average value for money (in terms of the proportion of pupils achieving level 4 in National Curriculum tests per £1,000 per pupil; the vertical axis shows the number of LEAs of schools achieving such results. The dark vertical line shows the national average.

Government policies for higher spending and lower class sizes look misguided in the light of the findings revealed by the Audit Commission data. In future, they need to put much more emphasis on value for money.

DIFFERENT TYPES OF SCHOOL

Does a state school's value for money increase depending on who runs it? The answer is "yes".

Table 3 shows the average GCSE standards for different types of state school:

- City Technology Colleges (CTCs);
- LEA or Community Schools; and
- Foundation and Voluntary schools.[17]

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[17] LEA schools become Community Schools after the 1998 Schools Standards and Framework Act; Grant-maintained Schools become either Foundation or Voluntary Schools after the same Act.

TABLE THREE AVERAGE GCSE STANDARDS FOR DIFFERENT TYPES OF STATE SCHOOLS (1999)

Type of School	% gaining good GCSE results	GCSE Points per Pupil*
City Technology Colleges	66.8	50.8
LEA/Community Schools	41.1	35.3
Foundation & Voluntary Schools	54.7	41.9

GCSE points are awarded on the scale running from 8 for an A*, 7 for an A, 6 for a B, and so on down to 2 for an F and 1 for a G.

Source: DfEE National Performance Tables.

The best results are obtained, on average, by the CTCs followed by the Foundation and Voluntary Schools group, while the LEA/Community Schools perform less well. This is true both for the percentage of pupils obtaining good results at GCSE and also for the average number of GCSE points per pupil.

Table 4 shows the average value for money for these different kinds of school calculated by dividing the GCSE results by the average amount of money spent per pupil in each school.[18]

Once again, the City Technology Colleges come top followed by the Foundation and Voluntary Schools, while the LEA/Community Schools perform less well.

TABLE FOUR AVERAGE VALUE FOR MONEY AT GCSE FOR DIFFERENT TYPES OF STATE SCHOOLS (1999)

Type of School	Good GCSE results/£1,000	GCSE Points per Pupil/£1,000
City Technology Colleges	26.7	20.4
LEA/Community Schools	17.5	15
Foundation & Voluntary Schools	22.7	17.4

Source: DfEE National Performance Tables.

[18] These expenditure figures are averages for each LEA.

CHAPTER THREE
DO INDEPENDENT SCHOOLS PROVIDE VALUE FOR MONEY?

> Edu: during the holidays from Eton.
>
> Sir Osbert Sitwell, entry in *Who's Who*.

Tony Blair believes that the secret of independent schools' success is money. He hopes to raise spending on state schools up to the level of the independent sector. Comparing the two sectors, he said:

> There's still a huge difference – and in the end that's why I say if you want a first class education system you have to understand as a country that we need to pay for it.[19]

A "senior government source" then added:

> The Prime Minister was indicating that as we continue with real term, year on year spending in state schools, we would hope to narrow the gap with the independent sector.[20]

This policy does not merely presume that higher spending will produce higher education results. It also rests on the assumption that those parents who spend thousands of pounds on an independent education for their children are getting good value for money. But is private education really worth it? Might those parents be better off – literally – sending their children to state schools?

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[19] Speech to the ATL conference, 12 April 2001.

[20] BBC News, 12 April 2001.

The data in this section compare the performances of two groups of schools:

- all states schools with sixth forms;
- a sample of leading independent schools made up of the 112 schools listed in the *Sunday Times Guide* published on 19 November 2000.

TABLE FIVE AVERAGE GCSE STANDARDS FOR STATE SCHOOLS AND A SAMPLE OF INDEPENDENT SCHOOLS

Type of School	% gaining good GCSE results	GCSE Points per Pupil
State schools with sixth forms	50.9	40.0
Sample of independent schools	95.2	62.2

Table 5 shows that the percentage of pupils obtaining good GCSE results is nearly twice as great in the independent sample as compared with the state school sample, while the advantage in GCSE points per pupil is about 50%.

Comparisons between the state and independent sectors must be treated with caution. However, it seems that, while pupils at independent schools get better results, state schools may provide better value for money

VALUE FOR MONEY COMPARISONS BETWEEN THE STATE AND INDEPENDENT SECTORS

Any comparison in terms of the value for money provided by the state and independent sectors must be treated with caution. Our research is a snapshot and more work in this area is needed as comparisons are difficult to make. For example, fees at independent schools cover a wider range of activity than in the state sector. In addition, fees at independent schools have to cover the cost of capital for buildings and sports facilities and the maintenance of buildings (which are not included in the running costs in many state schools).

The state schools analysed in this section are those state schools with sixth forms. It should also be noted that this group shows the state sector in its most favourable light, since state schools with sixth forms perform about 10% better compared with all state schools.

However, Table 6 indicates that when value for money is calculated – in the same way as before for the state schools and by using the annual fee given in the *Sunday Times* survey for independent schools – state schools provide about 50% better value for money.[21]

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[21] The *Sunday Times* survey suggests that the average annual fees at independent day schools is just over £7,000. The 2001 Independent Schools Information Service (ISIS) *Annual Census 2001* shows the average annual fee at independent day schools is £6,216. The *Sunday Times* fee data is probably slightly higher than the national average as it contains a disproportionate number of London- and South East-based schools (where costs tend to he higher). Equally, the ISIS data are based on all day schools and so include younger children (whose fees tend to be lower). However, the discrepancies between the two surveys do not materially effect the value for money calculations.

TABLE SIX AVERAGE VALUE FOR MONEY AT GCSE FOR STATE SCHOOLS AND A SAMPLE OF INDEPENDENT SCHOOLS

Type of School	Good GCSE results/£1,000	GCSE Points per Pupil/£1,000
State schools with sixth forms	21.7	16.9
Sample of independent schools	14.8	9.6

A-LEVEL RESULTS

Tables 7 and 8 show similar comparisons for A-level results between state schools with sixth forms and the sample of independent schools. The two indicators used for A-level performance are the same as those used in the performance tables published by the DfEE each year – that is the average number of A-level points per pupil obtained by all pupils taking two or more A-levels and the average number of A-level points per entry in the school.[22]

TABLE SEVEN AVERAGE A-LEVEL STANDARDS FOR STATE SCHOOLS AND A SAMPLE OF INDEPENDENT SCHOOLS

Type of School	Points/Pupil (2+A)	Points/Entry (1+A)
State schools with sixth forms	16.8	4.9
Sample of independent schools	27.8	7.8

Table 7 shows that the average number of points per pupils is considerably greater for the independent schools – about 28 points (2 As and a B) compared with about 17 points (2 Cs and a D) for the state schools with sixth forms.

Similarly the average points per entry is about five for the state schools (between a grade C and a D) while it is nearly eight for the independent schools (a grade B).

TABLE EIGHT AVERAGE VALUE FOR MONEY AT A-LEVEL FOR STATE SCHOOLS WITH SIXTH FORMS AND A SAMPLE OF INDEPENDENT SCHOOLS

Type of School	Points/Pupil per £1000	£ per A Grade
State schools with sixth forms	6.1	£5,950
Sample of independent schools	4.3	£9,150

Nevertheless, once again the situation is reversed when we calculate the value for money in Table 8.[23] This is perhaps most easily understood if we look at the second column which calculates how much money needs to be expended in order to achieve an A grade in state schools and independent schools. The figures are about £6,000 for an A grade in a state school compared with over £9,000 in an independent school. In other words there is an advantage of about 50% in favour of the state schools.

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[22] A-level points are calculated by awarding 10 for an A, 8 for a B, 6 for a C, 4 for a D and 2 for an E.

[23] Once again the cost per pupil in state schools is the average for each LEA as given by the Audit Commission but weighted 5/7 for the cost per pupil for 11-16 year olds and 2/7 for the cost per pupil for 16-18 year olds while for independent schools it is the fee given in the *Sunday Times* survey.

VARIATIONS IN GCSE STANDARDS

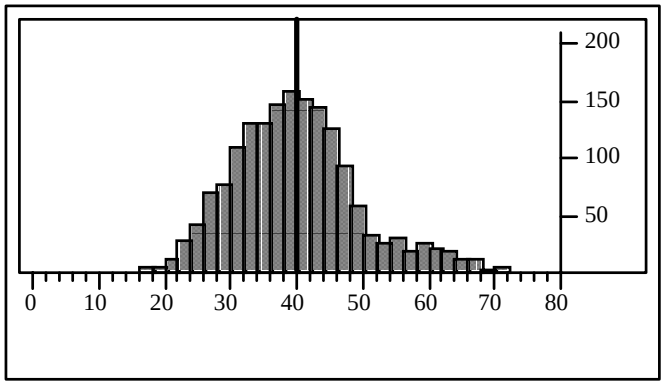
SCHOOL DISTRIBUTION CHARTS

School distribution charts enable the standards reached in a large number of schools to be perceived at a glance. For example, the Figure 5 shows information about the average GCSE points per pupil at state schools with sixth forms.

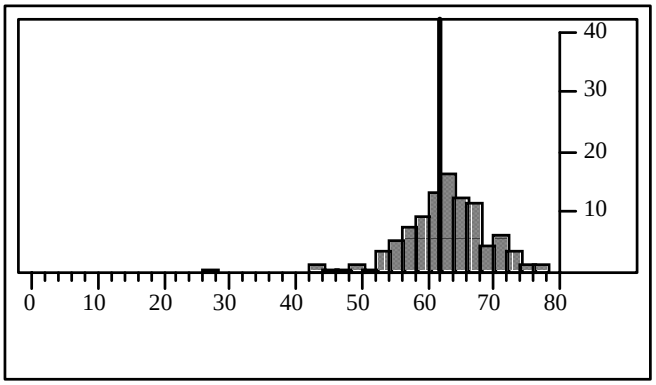
FIGURE 5

SCHOOL DISTRIBUTION CHARTS FOR AVERAGE GCSE POINTS/PUPIL FOR INDIVIDUAL SCHOOLS

STATE SCHOOLS WITH SIXTH FORMS (GCSE POINTS/PUPIL)



SAMPLE OF INDEPENDENT SCHOOLS (GCSE POINTS/PUPIL)



Note: the horizontal axis shows the GCSE points per pupil; the vertical axis shows the number of schools. So it shows the way in which schools are distributed across the whole range of values of average GCSE points per pupil.

The distribution for GCSE points per pupil for state schools with sixth forms is extremely broad ranging from about 20 points per pupil up to 65 or more. In the independent school sample, the range is not quite so great as for state schools with sixth forms. However, it is still fairly large, varying from about 50 points per pupil to nearly 80 points per pupil.

Figure 6 shows the value for money for the average number of GCSE points per pupil for state schools with sixth forms, and for the independent school sample.[24]

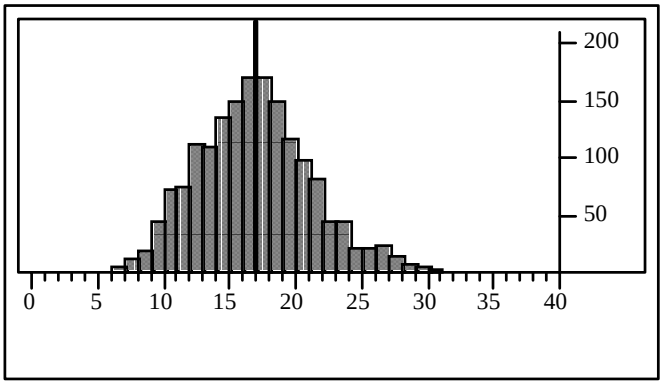
Once again, the most striking feature of both diagrams is the enormously wide variation in value for money for individual schools. These range from about seven up to nearly 30 for state schools with sixth forms and from about four up to 15 for independent schools.

In other words some schools – of both types – are achieving four times as much in terms of value for money as other schools of the same type, while the state schools, in raw terms, are providing, on average, twice as much value for money as independent schools.

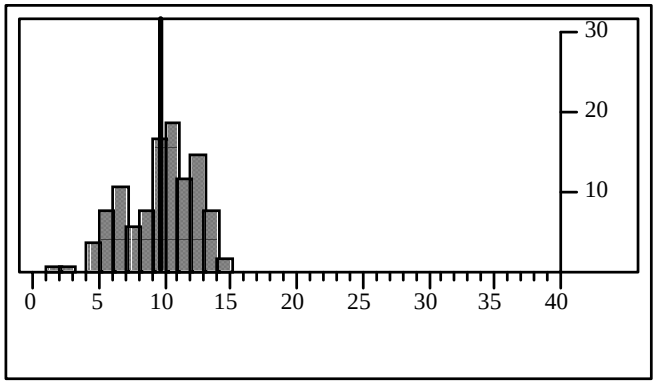
FIGURE 6

SCHOOL DISTRIBUTION CHARTS FOR AVERAGE GCSE POINTS/PUPIL PER £1000 FOR INDIVIDUAL SCHOOLS

STATE SCHOOLS WITH SIXTH FORMS



SAMPLE OF INDEPENDENT SCHOOLS



[24] The cost per pupil in state schools is the average for each LEA as given by the Audit Commission. For independent schools it is the fee given in the *Sunday Times* survey.

VARIATIONS IN A-LEVEL STANDARDS

SCHOOL DISTRIBUTION CHARTS

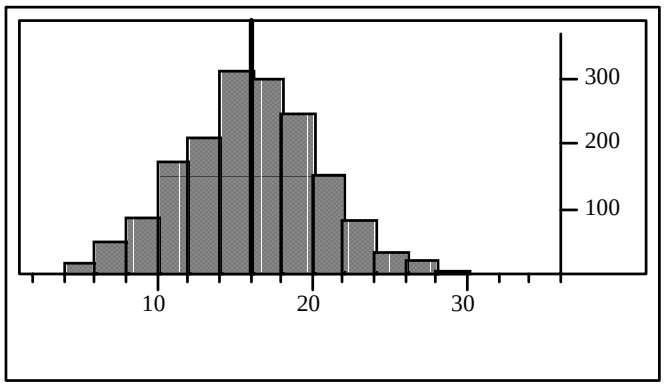
Figure 7 shows that, once again, there are considerable variations in the average A-level performance of pupils at both types of school.

The total number of A-level points per pupil for pupils taking two or more A-levels at state schools ranges from about five up to nearly 30 and in independent schools from about 20 up to nearly 40.

FIGURE 7

A-LEVEL POINTS/PUPIL FOR PUPILS TAKING 2 OR MORE A-LEVELS

STATE SCHOOLS WITH SIXTH FORMS



SAMPLE OF INDEPENDENT SCHOOLS

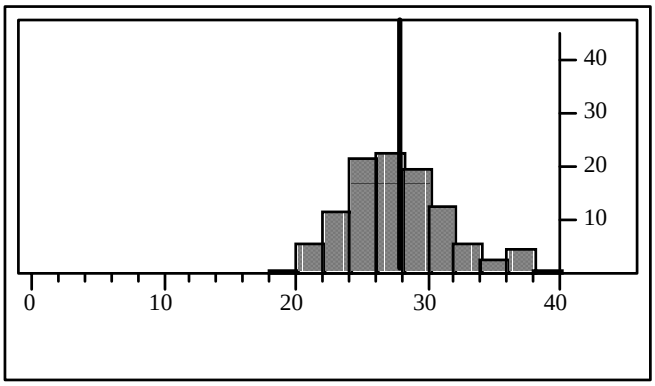
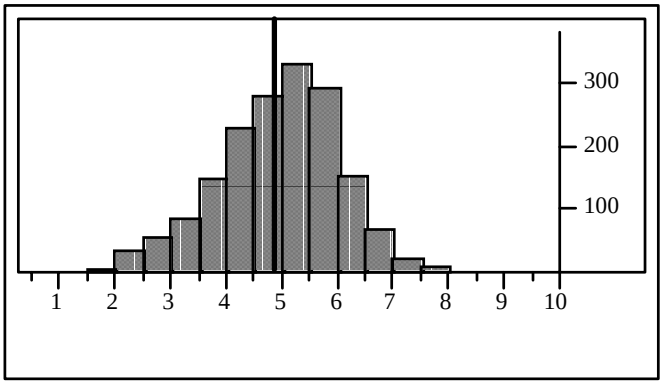


Figure 8 shows that the average A-level points per entry at state schools ranges from about two (an E grade) up to 8 (a B grade) whereas for independent schools it ranges from six (a C grade) up to 10 (an A grade).

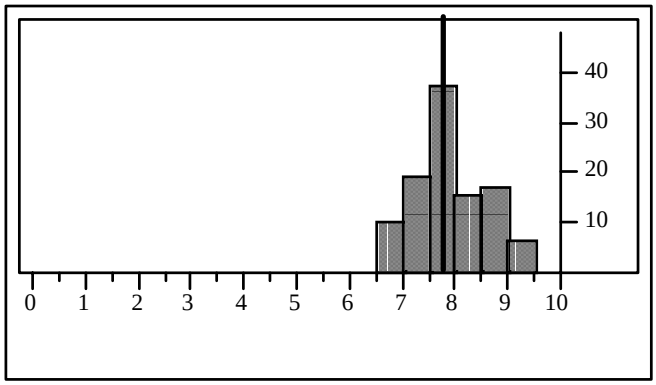
FIGURE 8

A-LEVEL POINTS/ENTRY

STATE SCHOOLS WITH SIXTH FORMS



SAMPLE OF INDEPENDENT SCHOOLS (112 SCHOOLS)



On average, an A grade at A-level costs under £6,000, at state schools compared to over £9,000 at independent schools.

VALUE FOR MONEY AT A-LEVEL

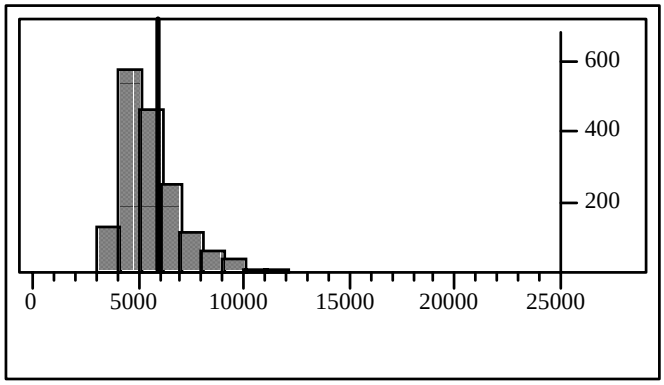
SCHOOL DISTRIBUTION CHARTS

Figure 9 suggets that the variations in value for money are, if anything, even more striking. The cost of an A grade at a state school ranges from about £3,000 up to £10,000 whereas the cost of an A grade at schools in the independent school sample ranges from about £5,000 up to more than £15,000.

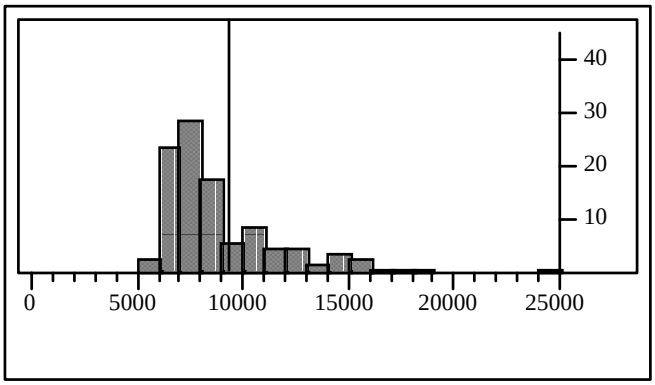
FIGURE 9

£/ GRADE A AT A-LEVEL

STATE SCHOOLS WITH SIXTH FORMS



SAMPLE OF INDEPENDENT SCHOOLS (112 SCHOOLS)



STATE AND INDEPENDENT DAY SCHOOL FEES 1992-1999[25]

Figure 10 illustrates how the average expenditure per pupil in real terms in state schools has fallen slightly since 1992, from £2,600 to about £2,500,[26] whereas the average expenditure per pupil in real terms in independent day schools has risen from about £5,000 to over £7,000. Despite – or because of – this increase in fees, the independent sector is not delivering the same value for money, in raw terms, as the state sector.

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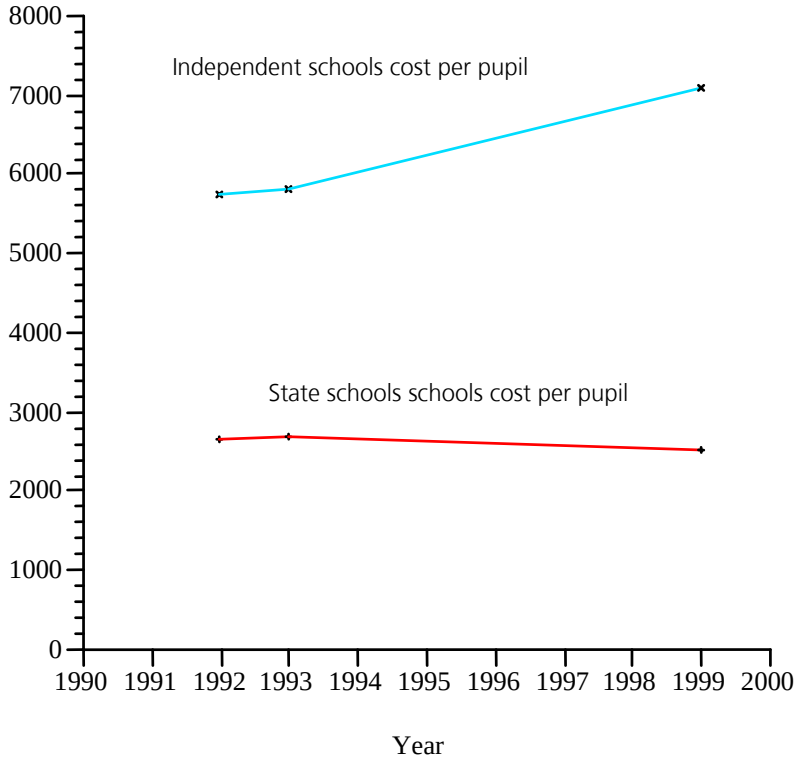
[25] Fee information for 1992 is only available for 107 of the 112 schools and in 1993 for 93 schools (Source *Financial Times* Performance Tables, 31 October 1992 and 30 October 1993).

[26] The rapid rise in overall education spending in the 1990s (see Figure 1, page 4) can largely be attributd to the growth in the number of students in higher education.

FIGURE 10

SECONDARY & INDEPENDENT DAY SCHOOLS – 1992-1999

COST/PUPIL (ADJUSTED FOR INFLATION)[27]



[27] The figures are calculated in terms of the value of the £ in the year 1999.

CHAPTER FOUR
IF WE SPENT AS MUCH AS OTHER COUNTRIES, WOULD OUR PERFORMANCE MATCH THEIRS?

Figure 1 on page 4 shows how public expenditure on education has risen by three times in real terms over the last 40 years. Are standards of education here now on a par with, or above, many other developed countries?

The results in mathematics for both England and Scotland[28] in the Third International Mathematics and Science Study (TIMSS) in 1995, left a lot to be desired. Compared to 10 other major industrialised countries – Singapore, Japan, Switzerland, Hungary, France, Canada, Germany, Sweden, England, the United States and Scotland – most of the results were in the order just listed with England, the United States and Scotland coming at or near the bottom.[29]

Table 9 shows the results for 40 countries for:

- the secondary mathematics score, approximately at the age of 13;
- the primary mathematics score, approximately at the age of 9; and
- the figure calculated for the self-esteem of the pupils.[30]

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[28] Wales and Northern Ireland did not take part.

[29] The performance of English pupils in science was considerably better but this may be because most other countries do not explicitly teach much science in primary schools or in the early years of secondary education.

[30] The self-esteem score is based on the pupils own opinion as to whether or not they were good at maths on a four point scale.

The last two columns compare the reality of pupils' performance with how good they think they are.

TABLE NINE RESULTS FOR INDIVIDUAL COUNTRIES IN TIMSS

Country	Secondary Maths	Primary Maths	Self-Esteem	Rank/ Secondary Maths	Rank/ Self-Esteem
Singapore	643	625	2.64	1	33
Korea	607	611	2.35	2	37
Japan	605	597	2.36	3	36
Hong Kong	588	587	2.32	4	38
Belgium	565	•	2.75	5	29
Czech Republic	564	567	2.72	6	31
Slovak Republic	547	•	2.82	7	27
Switzerland	545	•	2.98	8	17
Netherlands	541	577	3.03	9	13
Slovenia	541	552	2.93	10	23
Bulgaria	540	•	•	11	39
Austria	539	559	3.04	12	12
France	538	•	2.84	13	24
Hungary	537	548	2.84	14	25
Russian Federation	535	•	2.77	15	28
Australia	530	•	2.97	16	19
Canada	527	532	3.16	17	6
Ireland	527	550	2.94	18	21
Israel	522	531	3.25	19	2
Thailand	522	490	2.73	20	30
Sweden	519	•	3.01	21	16
Germany	509	•	2.98	22	18
New Zealand	508	499	3.02	23	15
England	506	513	3.16	24	7
Norway	503	502	2.97	25	20
Denmark	502	•	3.28	26	1
United States	500	545	3.17	27	5
Scotland	498	520	3.08	28	9
Latvia	493	525	2.65	29	32
Iceland	487	474	3.08	30	10
Spain	487	•	2.94	31	22
Greece	484	492	3.07	32	11
Romania	482	•	2.83	33	26
Lithuania	477	•	2.55	34	35
Cyprus	474	502	3.03	35	14
Portugal	454	475	2.63	36	34
Iran	428	429	3.19	37	4
Kuwait	392	400	3.24	38	3
Colombia	**385**	•	**3.09**	**39**	**8**
South Africa	**354**	•	•	**40**	**40**

Table 9 shows that the countries which perform best in mathematics such as Singapore, Korea, Japan, Hong Kong and a number of European countries performed much less well in terms of self-esteem, whereas countries like England, the United States and Scotland which were well down the list for standards in mathematics achieved very highly on the self-esteem score.

When these results were first revealed at a meeting of the English TIMSS Steering Committee, a mathematics educator commented thus:

> It is very gratifying to see that all the work we have done over the last 15 years in trying to raise pupils self-esteem in mathematics has been successful. However, it seems we were wrong to assume that this would also be reflected in higher standards of performance.

"It is very gratifying to see that all the work we have done over the last 15 years in trying to raise pupils' self-esteem in mathematics has been successful. However, it seems we were wrong to assume that this would also be reflected in higher standards in performance".

This attitude may help to explain why 13 year old pupils in England performed very badly on one very basic question[31] in arithmetic:

$$\begin{array}{rr} & 6000 \\ & -\ 2369 \\ = & \quad ? \end{array}$$

It was a multiple choice question with four possible answers, one of which was to be ticked:

(a) 4369
(b) 3742
(c) 3631
(d) 3531

It was not a test in mental arithmetic but a written question which was set out in the test paper vertically so that it could be calculated in the ordinary written way. It must, therefore, surely be regarded as an adequate test of competence in basic arithmetic.

Of 13 year-olds in the five major Western European countries listed, 92% answered this question correctly. Switzerland and Belgium were the highest with 96%. In Germany 93% answered correctly; and even in the United States 88% answered correctly. In England only 59% did so. Of the 41 countries included in the survey, average scores lower than England's were recorded only

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[31] S Prais, *How did English Schools and Pupils Really Perform in the 1995 International Comparisons in Mathematics?*,NIESR, Note 13.

by Colombia and South Africa (both with 57% correct). Scotland's overall scores in mathematics were generally a little below England's, yet on this basic question Scottish pupils did better – with 75% answering correctly; even so, Scotland was among the lowest four of the 40 participating countries for which results for this question were reported.

By the age of 14, the percentage of English secondary pupils answering this question correctly had risen to 65%. This rate of progress means that English pupils are unlikely to reach West European standards before they reach the school leaving age and that about a third of English youngsters will reach school-leaving age unable to carry out such a basic sum, compared with under one in ten in Western Europe.

When confronted with this poor performance, it is tempting to believe that the cause is underfunding. To test this belief, economic data for education published by the OECD have been correlated with Mathematics results from TIMSS.[32]

Average mathematics scores for both nine year olds and thirteen year olds are independent from spending.

MATHEMATICS STANDARDS FOR 9 YEAR OLDS

In summary, the performance of pupils in primary schools in mathematics at the age of 9:

- is better when there are fewer teachers per pupil (results arepositively correlated with the primary pupil:teacher ratio (+ 0.43));
- does not depend on the amount of money spent (results are almost independent of the amount of money spend per primary pupil (-0.01));
- and actually increases if less of the GDP is spent on state schools (results are negatively correlated with the percentage of the countries' GDP which is spent on state education (-0.44));
- and is independent of most of the other indicators listed by the OECD such as teachers pay, amount of money devolved to schools, the enrolment ages of pupils, teachers qualifications, and the number of teaching hours per year in schools.

The relevant scattergrams with trend lines are shown in Appendix 3.

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[32] The international economic data for education are taken from *Education at a Glance – OECD Indicators, 2000 Edition.* This report also lists the TIMSS results but does investigate the correlations described here.

MATHEMATICS STANDARDS FOR 13 YEAR OLDS

Average mathematics scores from TIMSS for secondary school pupils at the age of 13:

- are strongly linked to how well pupils do in primary schools (results are very strongly correlated with the average performance for primary school pupils at the age of 9 (+0.93));
- are better when there are fewer teachers per pupil (results are positively correlated with the average pupil/teacher ratio in secondary schools (+0.30));
- do not depend on the amount of money spent (results are almost independent of the amount spent per secondary pupil (+0.04));
- actually increases if a smaller proportion of GDP is spent on state schools (results are negatively correlated with the percentage of GDP spent on state schools (-0.34));

The relevant scattergrams with trend lines are again shown in Appendix 3.

It should, however, be noted that the main factor influencing the mathematics standards reached in secondary schools at the age of 13 is, unsurprisingly, the mathematics standards reached in primary schools at the age of 9.

THE AMERICAN EXPERIENCE

"No Child Left Behind" is President George Bush's slogan for his education strategy. "No cheque left unwritten" might be more accurate. The President plans an 11% increase in the Department of Education's budget – the largest of any department – bringing the department's budget to a total of $44.5 billion for the fiscal year 2002.

> *"There is no evident correlation between pupil-to-teacher ratios, spending on school infrastructure and teacher salaries on the one hand, and educational achievement as measured by various standardised test scores, on the other"* – US Report Card 2000.

This increase is nothing new. The last century saw a bonanza in spending on America's public education system. Between 1890 and 1990 public expenditure (in real terms) on primary and secondary education rose from $2 billion to more than $187 billion (in constant 1990 dollars). This one hundred-fold increase is more than triple the growth rate of GNP during the same period. Real per student expenditure roughly quintupled in each 50 year period between 1890 and 1980: in 1890 it was $164; by 1940 it had reached $772; and in 1990 it hit $4,622.[33]

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[33] Eric A Hanushek, *Economic Policy Review*, March 1998.

But has such generosity raised standards? The latest *Report Card on American Education* – published by the American Legislative Exchange Council, the leading bipartisan organisation of the State Legislatures – is the most recent in a series of surveys which suggests the answer is "no".

Throughout the United States, spending per pupil has risen in real terms by more than 22.8% over the past two decades. Yet 69% of American eighth graders are still performing below proficiency in reading, according to the 1998 national test results.

To quote from the 2000 *Report Card* itself:

> The findings of this year's report demonstrate that there is no evident correlation between pupil-to-teacher ratios, spending on school infrastructure and teacher salaries on the one hand, and educational achievement as measured by various standardised test scores, on the other. Moreover, there is no clear correlation between federal spending on education and student achievement. In other words, the keys to educational excellence must lie outside of conventional measures of investment in America's schools.

The authors continue:

> Improving student achievement is not based on dollars spent, schools constructed, or even teachers hired. Instead, improvements are realised with the strength of civic institutions, such as parental involvement, the decentralisation of district-controlled public schools, and strong family structures.[34]

This echoes research by a number of academics who wanted to see whether there was a link between education spending and educational achievement. Unlike in Britain, they were helped by America's standardised tests, the National Assessment of Educational Progress (NAEP), taken by thousands of children.

"There is little reason to be confident that simply adding more resources to schools as currently constituted will yield performance gains among students" – Professor Eric Hanushek.

One of the largest such studies was conducted by James S Coleman, a sociologist at John Hopkins. In 1966 he published *Equality of Educational Opportunity*, a piece of research based on tests being given to 570,000 schoolchildren and 60,000 teachers, and data gathered from 4,000 primary and secondary schools. This found that spending only marginally affected how much children learnt. Family background was more important.

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[34] American Legislative Exchange Council, *Report Card on American Education: A State by State Analysis 1976-2000*, 17 April 2001.

Coleman's work has been amplified by Professor Eric A Hanushek. Studying pupils' NAEP scores, Hanushek found that although real spending per student increased by more than 70 per cent between 1970 and 1991:

> Our students are not quite doing as well in science as they did in 1970. In maths, the 1996 performance was about the same as it was in 1970… There is little reason to be confident that simply adding more resources to schools as currently constituted will yield performance gains among students.[35]

A RIDDLE

In an earlier study[36] Hanushek unearthed the following educational riddle:

- American students' performance in the Scholastic Aptitude Test (SAT) fell steadily from 1963 onwards. Verbal scores fell about one half of a standard deviation before bottoming out in 1979. Maths scores followed the same pattern, although the decline was not so marked.
- Yet over the same period, education spending rose sharply. By 1983, spending per pupil was 135% higher in real terms than it was in 1960.
- Much of the increase in expenditure went towards lowering class sizes: in the public schools, the pupil teacher ratio fell over 25% between 1960 and 1980.
- Meanwhile, the characteristics of the teaching workforce changed in two ways. In the mid-1960s, one third of public school teachers were in their first four years of teaching. By 1983, that had fallen to one twelfth. Second, between 1966 and 1983, the percentage of all teachers with a master's degree or better doubled. By 1983, over half of all public school teachers held at least a master's degree. During this period, however, teachers' salaries had barely risen. In 1960, the average salary was (in 1983 prices) $17,406: by 1983, it had crept up to $21,790.

In an attempt to solve this riddle, Hanushek looked at 147 separate studies on the correlation between inputs (such as pupil teacher ratios) and output (academic results). Conventional wisdom has it that each factor should have a positive impact on school standards. However:

- Of the 112 estimates of the effects of lower class sizes, only 23 are statistically significant, and only nine show a statistically significant relationship of the expected positive sign. Fourteen display a statistically significant negative relationship.
- Of the 106 studies into teacher education, only six showed a positive relationship between the level of teachers' education and pupil's results.
- Of the 109 studies into teacher experience, 33 show a positive relationship between teachers' experience and their students' results. However, as

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35 Eric A Hanushek, op. cit.

36 Eric A Hanushek, "The Economics of Schooling: Production and Efficiency in Public Schools", *Journal of Economic Literature*, Vol. XXIV (1986) pp. 1141–1177.

Hanushek points out, this might be that good teachers go to good schools, thereby creating a virtuous circle. Achievement feeds experience, not vice versa.

The only consistency to the results is, Hanushek remarks, the fact that:

> There appears to be no strong or systematic relationship between school expenditures and student performance.

The consistency lies in inconsistency.

Other research buttresses this finding. For example:

- In 1996-7, New Jersey had the highest per pupil expenditure ($10,241) and the second smallest pupil to teacher ratio. Yet its students ranked 39th out of 50 states on the 1998 Scholastic Aptitude Test. Conversely, Minnesota, which ranked 27th in per pupil spending ($5,826), received the highest ranking in student achievement on the same test.[37]
- In the early 1990s, 15 schools in lower income and minority neighbourhoods in Austin, Texas, each received $300,000 for five years as part of a desegregation settlement. All of them lowered class sizes. But only three changed their curriculum and how they taught. Their scores went up and absenteeism dropped. In the remaining schools, the opposite occurred.[38]
- A study on the effect of the size of a class found that, on average, being in a small class does not increase the likelihood that a student will attain a higher score on the NAEP reading test, according to an analysis of the 1998 results. Furthermore, children in the smallest classes (those with 20 or fewer students per teacher) do not score higher than students in the largest classes (those with 31 or more students per teacher). Indeed, in the eighth grade, children in small class sizes appear to do worse in the NAEP reading exam than those in large class sizes. Yet spending on reducing class sizes continues to rise: the American Congress allocated $1.3 billion for "Class Size Reduction" in the fiscal year 2000.[39]

THE OECD/PISA REPORT

In December 2001 the OECD published the first results from its continuing Programme for International Student Assessment (PISA).[40] These results were reported as showing that that standards in English schools were better relative to many other countries than had been found in earlier international studies such as TIMSS (see above). The Government suggested that the report was

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37 American Legislative Exchange Council, *Report Card on American Education*, cited in The Heritage Foundation Backgrounder *The Folly of an Education Spending Race*, 24 February 1999.

38 *Denver Rocky Mountains News*, 14 February 1999.

39 *Do Small Classes Influence Academic Achievement?* Kirk A Johnson Ph.D., The Heritage Centre for Date Analysis, The Heritage Foundation, 9 June 2000.

40 *Knowledge and Skills for Life: First results from the OECD Programme for International Student Assessment (PISA) 2000*, OECD, Paris, December 2001.

evidence that its education policies – such as a drive for smaller class sizes and an increase in education spending – were raising standards.

However, there are a number of reasons why such claims are misplaced.

First, the PISA study was intended to show pupils' grasp of a broad range of skills and competencies going well beyond the knowledge or level of educational attainment expected from a country's curriculum assessed in TIMMS and earlier similar surveys. For example, PISA defines mathematical literacy as:

> .....the capacity to identify, understand and engage in mathematics, and to make well-founded judgements about the role that mathematics plays in an individual's current and future private life, occupational life, social life with peers and relatives, and life as a constructive, concerned and reflective citizen.

This can include:

> …taking a point of view and appreciating things expressed mathematically (such as having an opinion about a government's spending plans).

Second, the sample of UK schools was below that which the survey's authors thought was acceptable. Initially, only 60% of schools that were approached actually participated in the survey. Only when other schools were asked to take part did the figure rise to 82% – lower than the 85% that PISA required.

Third, no information is given in the report as to how the schools – or their pupils – were selected. For all we know at present, the sample could have excluded low schools with poor academic results or schools could have excluded pupils with low attainments. More information will be made available in a Technical Report but this has not yet been published.[41]

Fourth, pupils were allowed to use calculators – unlike in the TIMMS survey.

Fifth, the PISA study appears to present its own results regarding pupil/teacher ratios (PTR) disingenuously. Although the text (pp. 200-208) appears to claim that secondary pupils' performance improves as PTR decreases, the graph given shows that average performance rises as the PTR increases over the range of values actually found in virtually all the countries involved. Furthermore, the paper states that its data did not predict substantial improvements in academic performance when PTR were at or below 25 (p.209), whereas the graph given actually shows a decrease in performance as pupil/teacher ratios fall below 25.

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[41] The Technical Report is due to be published in February, 2002; it is odd that results were published and publicised before crucial information about how those results were obtained is available for detailed scrutiny.

CHAPTER FIVE
CONCLUSION

> There was a time when a fool and his money were soon parted, but now it happens to everybody.
>
> Adlai Stevenson

Political debate on education is stuck in a rut. Politicians of all persuasions seem to believe that spending more on education will make Britain a brighter nation.

The important issue is not how much money is spent on education, but how effectively it is used.

Conservatives share the blame. Instead of questioning whether extra public spending on education is really necessary, it plays follow-my-leader, merely matching the Chancellor's spending plans.

It is easy to assume that spending more on education is automatically desirable. But this begs the important question of how effectively money is being used. In the language of the economist, investing in education is one thing but making that investment productive is quite another.

Questioning political orthodoxy invites debate and involves taking a political risk. But going with the flow, and allowing the spending race between the political parties to continue, is costly and intellectually dishonest.

It seems that the public is increasingly sceptical about Ministers' annual boast that "standards are rising". The time will come too when tax-payers begin to wonder whether spending billions more on education will automatically deliver real value for money.

This paper does not imply cuts in education spending. What it does suggest, however, is that, before we spend any more on education, we should consider whether the existing budget is delivering value for money. A proper evaluation might reveal that some areas should receive more money, and others less.

For example, should we have more rigorous performance pay for teachers, one which really rewards good teachers? If we were to do so, would higher pay attract more, and more able, graduates into the profession?

How can we ensure that more money reaches high-performing schools, rather than being devoured by local education authorities? LEAs delegate, on average, only 76.4% of the Local Schools Budget to schools: how can this figure be raised?

There are a number of policies which the Government could implement that would cast more light on this subject. In particular, each school's performance should be assessed in terms of value for money: how much does it cost to get a good exam result? For example, National Performance Tables should include columns for average class sizes and expenditures per pupil alongside each school's National Curriculum and GCSE results so that value for money can be evaluated by everybody. What could be fairer and more transparent than making the relevant information available to every parent and voter in the land?

The time will come when tax-payers begin to wonder whether spending billions more on education will automatically deliver better results.

Challenging the notion that just spending more taxpayers' money on education is the route to higher academic standards will be derided by some. Those who dispute the findings in this report should produce factual arguments of their own to justify the continued spending race on education.

All that we ask is that people will consider the findings and conclusions. We hope it will start, not end, debate.

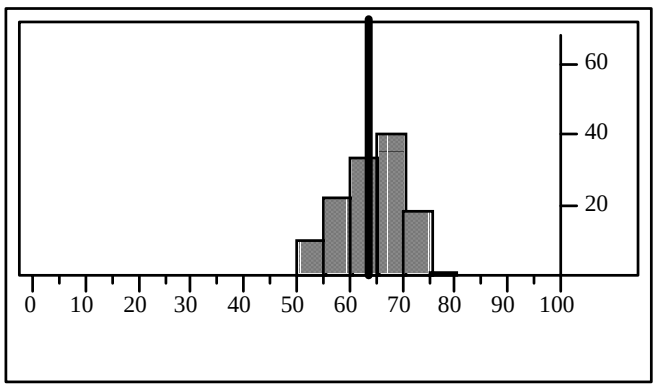
APPENDIX 1
BACKGROUND DATA

The distribution of %4+ – the percentage of pupils reaching level 4 in national curriculum tests and teacher assessments – for 130 LEAs for 1997 is shown in Figure 1a: the distribution of %4+ for 149 LEAs for 1999 is shown in Fig. 1b: the horizontal scale shows %4+; the vertical scale shows the number of LEAs for each range of values of %4+; in all charts, the vertical line shows the national average.

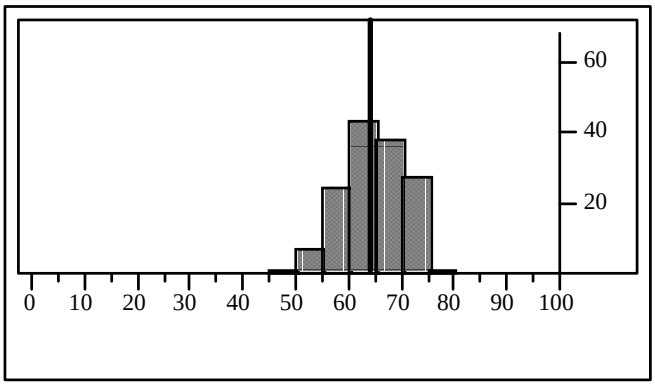
FIGURE 1

PERCENTAGE OF 11 YEAR OLDS ACHIEVING LEVEL 4 (%4+)

1997



1999

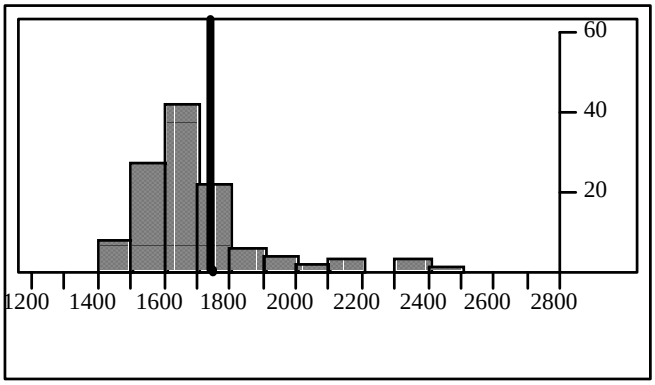


There is also a gulf between the amount that LEAs spend on education. The costliest LEA spends nearly twice as much per pupil as the cheapest LEA; the average is about £1,740 in 1997 rising to £1,860 in 1999.

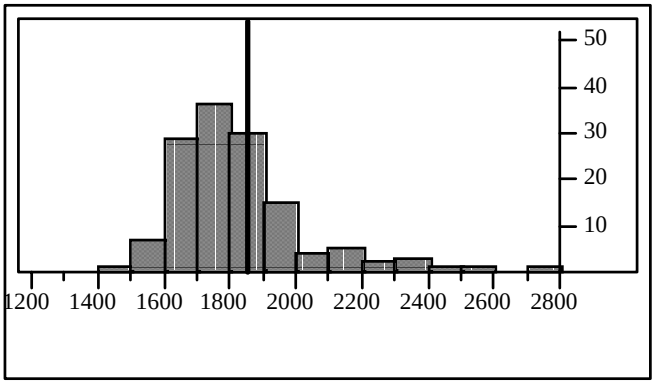
FIGURE 2

COST PER PUPIL IN PRIMARY SCHOOLS

1997



1999



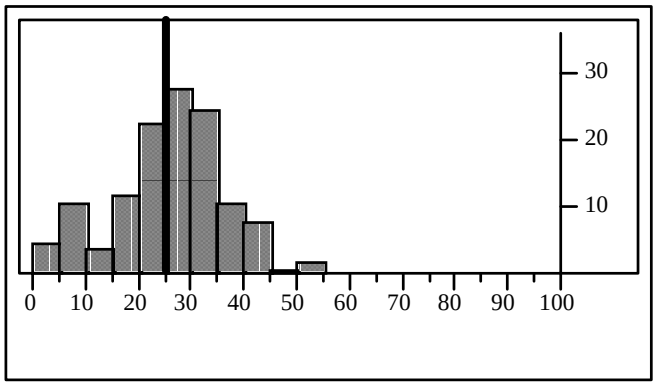
CLASS SIZES

One LEA has over 50% of classes with more than 30 pupils compared with only about 2% for another LEA; the average is about 25.7% in 1997 falling to 23.9% in 1999.

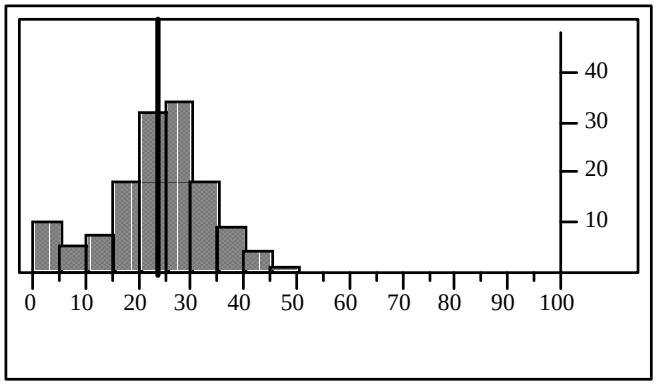
FIGURE 3

PERCENTAGE OF CLASSES WITH MORE THAN 30 PUPILS

1997



1999



SECONDARY SCHOOLS – STANDARDS & COSTS

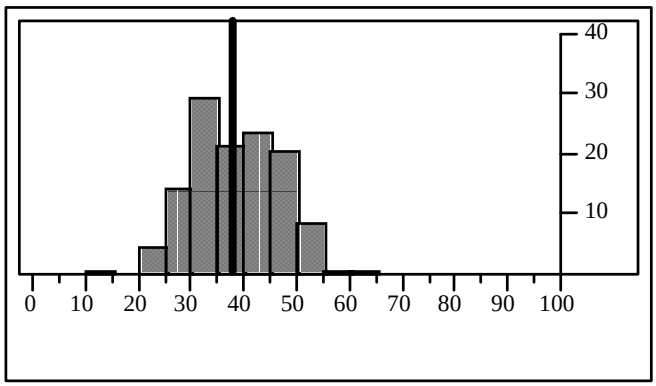
STANDARDS

The percentage of pupils with 5 or more GCSEs at grades A* to C varies from 20% to over 60%; the average is 37.8% in 1997 rising to 39.1% in 1999.

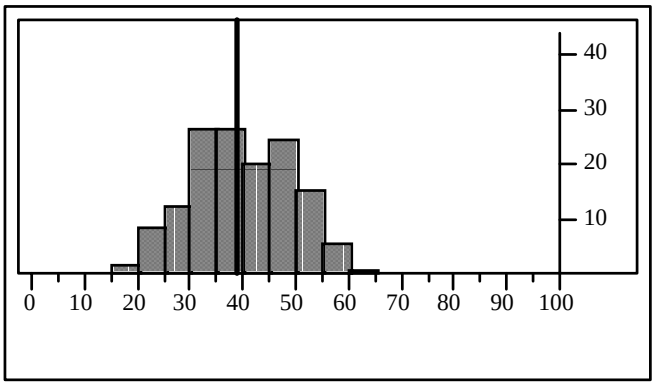
FIGURE 4

PERCENTAGE OF 16 YEAR OLDS ACHIEVING FIVE OR MORE GCSE GRADES A* TO C (%5A*C)

1997



1999



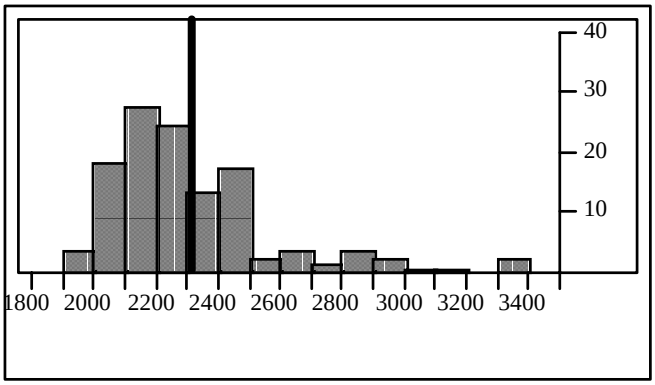
COSTS PER PUPIL

The costliest LEA spends about 80% more per pupil than the cheapest LEA; the average is £2330 in 1997 rising to £2448 in 1999.

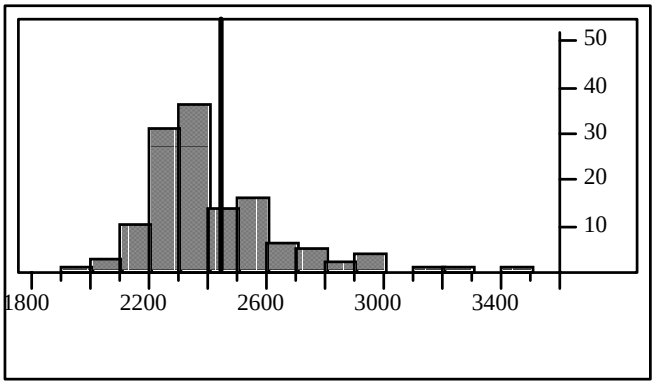
FIGURE 5

COST PER PUPIL IN SECONDARY

1997



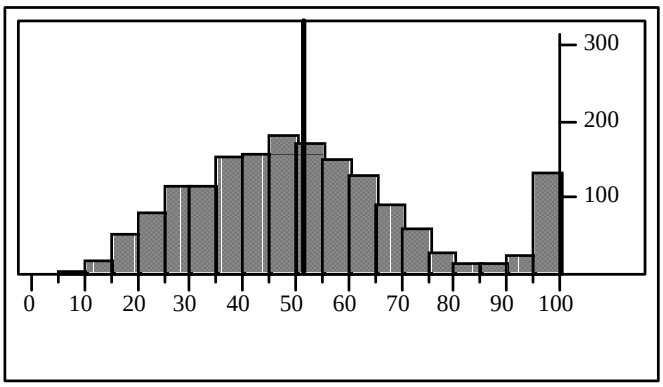
1999



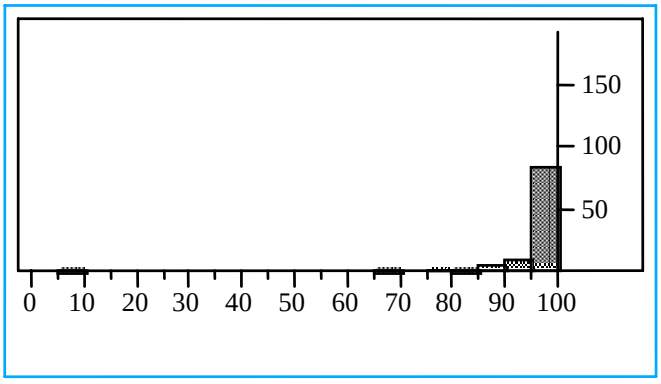
APPENDIX 2
INDIVIDUAL STATE AND INDEPENDENT SCHOOLS

GCSE %5A*C

STATE SCHOOLS WITH SIXTH FORMS



SAMPLE OF INDEPENDENT SCHOOLS



STATE SCHOOLS WITH SIXTH FORMS

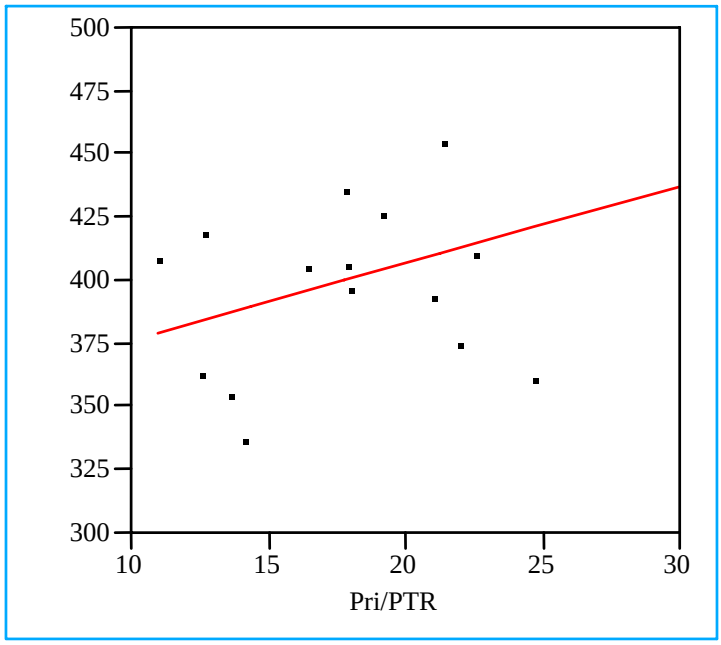
The distribution for the percentage of pupils obtaining 5 or more GCSE A* to C grades is extremely broad, varying from about 10% up to nearly 100%.

THE INDEPENDENT SCHOOL SAMPLE

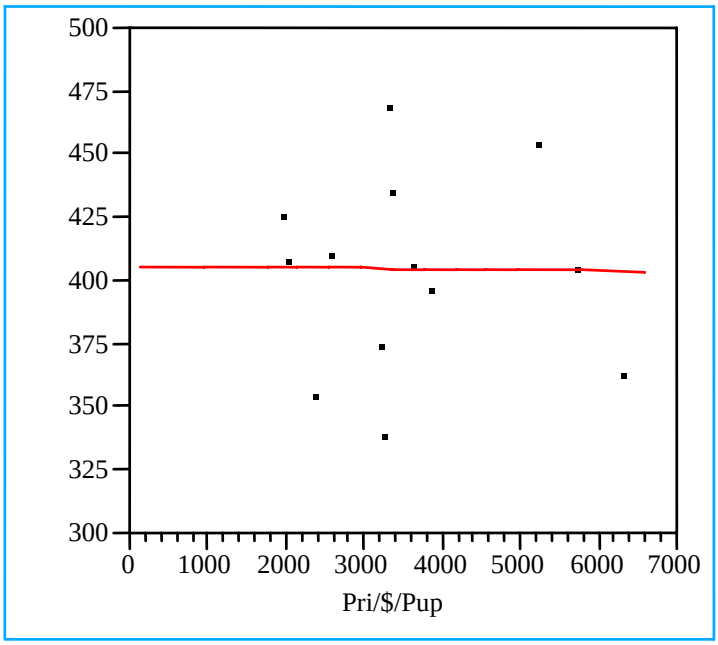
The range is small for 5 or more A* to C grades from 58% to 100%.

APPENDIX 3
SCATTERGRAPHS OF INTERNATIONAL DATA

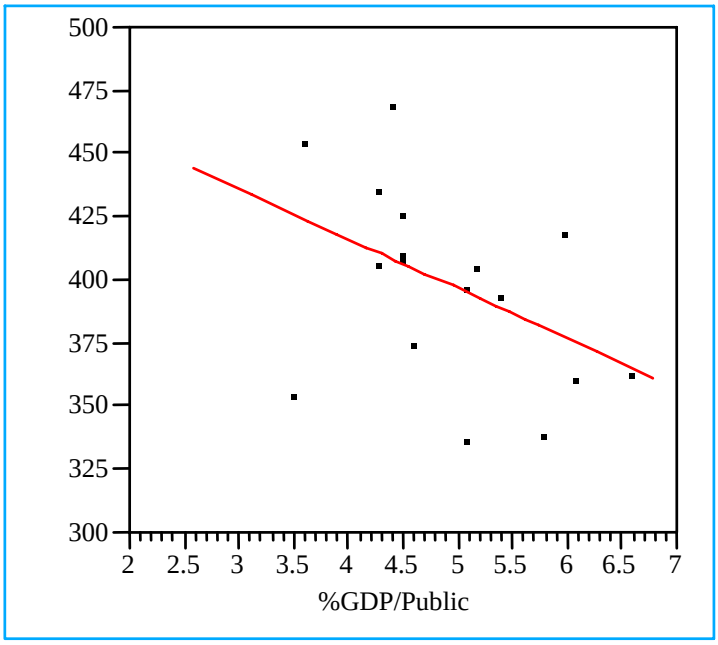
PRIMARY MATHS is positively correlated with Primary PTR (+0.43)…



…is almost independent of Primary $/Pupil (-0.01)…

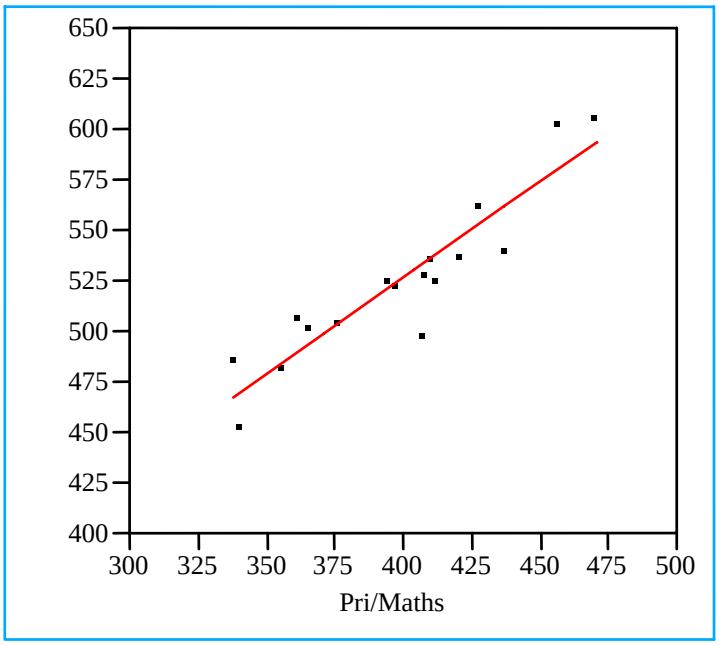


…is negatively correlated with %GDP/Public (-0.44)…

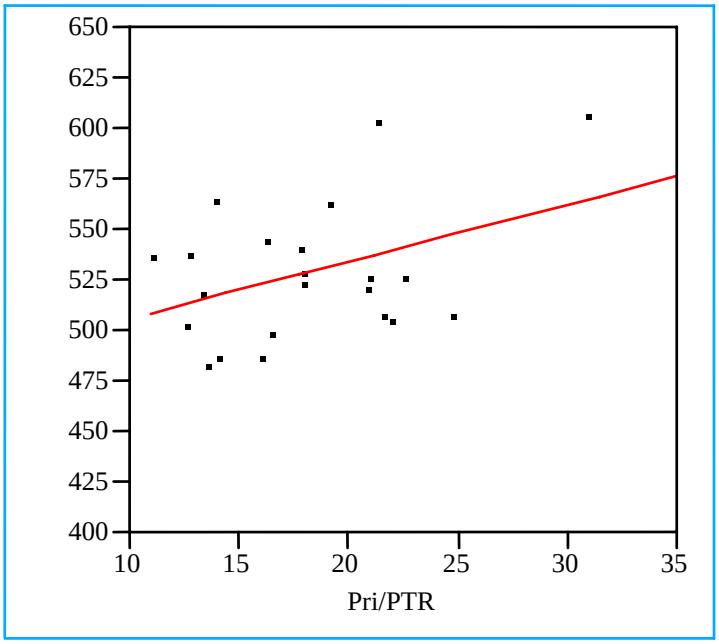


…and almost independent of most of the other indicators listed by the OECD such as teachers pay, amount of money devolved to schools, the enrolment ages of pupils, teachers qualifications, and the number of teaching hours per year in schools.

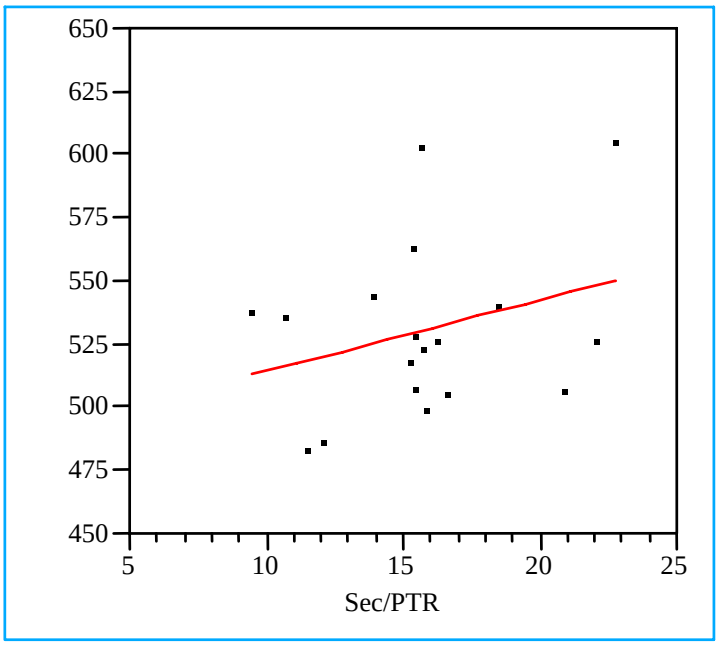
SECONDARY MATHS is very strongly correlated with Primary Maths (+0.93)…



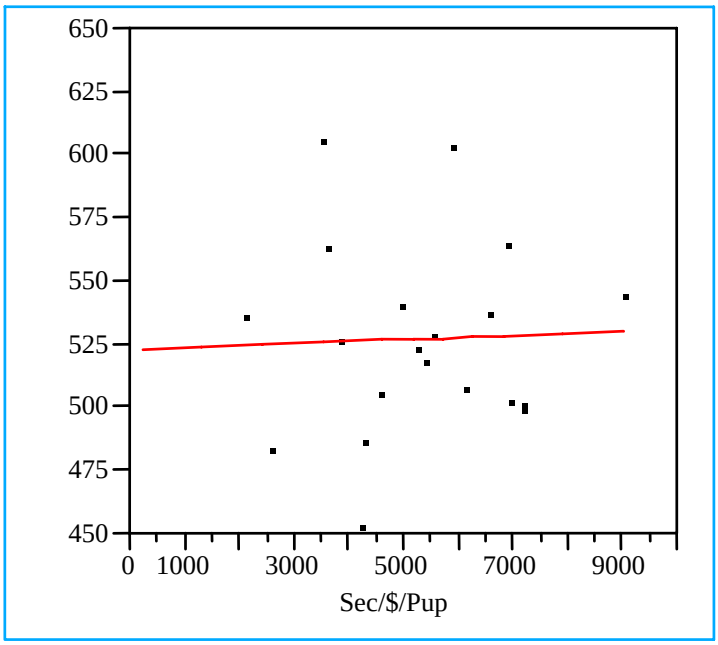
…positively correlated with Primary PTR (+0.41)…



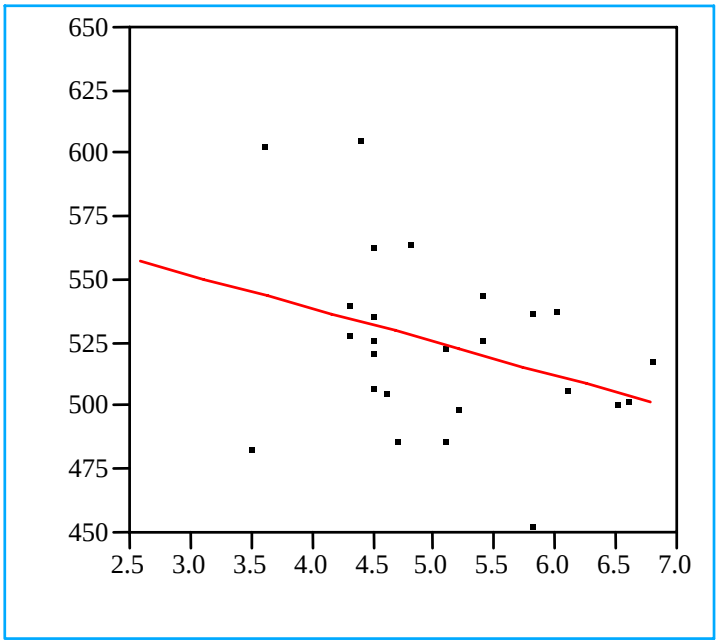
…less strongly positively correlated with Secondary PTR (+0.30)…



…almost independent of Secondary $/Pupil (+0.04);



… negatively correlated with %GDP/Public (-0.34)…



…and virtually independent of the other variables mentioned above.

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…a speech of great subtlety, intelligence and importance – Melanie Phillips, *The Daily Mail*

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The damning research from the CPS shows that the DTI does not provide the necessary support for the business community, having become saddled with social programmes which have caused a 58% rise in DTI expenditure – Simon Goodley, *The Daily Telegraph*

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