School Funding Equity in England

A risk and resource brief on state-funded mainstream schools

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Summary

This brief applies the first step of the framework for evaluating and reforming education finance systems (Baker, Atchison & Levin, 2026) to England, following analyses of Mexico, Brazil, France, the Republic of Korea and Australia. **Risk analysis** asks which characteristics of pupils predict lower outcomes. **Resource analysis** asks whether resources are greater where those risks are concentrated, after accounting for cost factors that are not need. England publishes unusually complete open data: school-level attainment, pupil characteristics, workforce and finance for every state-funded school. The analysis covers 15,767 primary and 3,348 secondary schools (maintained schools and academies), with workforce data for 2021/22 to 2025/26, spending for 2021/22 to 2024/25 and national funding formula allocations for 2026-27.

- **Poverty and special educational needs drive risk; English as an additional language does not.** The share of pupils eligible for free school meals (FSM) and the share receiving SEN support are the strongest predictors of results at the end of primary (Key Stage 2) and secondary (Key Stage 4). Together they explain 23% of the variation between primary schools and 38% between secondary schools. Schools at the 90th percentile of need score 1.2 (primary) and 1.6 (secondary) standard deviations below schools at the 10th.
- **Funding is progressive, by about a fifth.** Comparing schools of similar size, London location and sparsity in the same local authority, schools at the 90th percentile of need spend 1.21 times as much per pupil as schools at the 10th in primary and 1.16 times in secondary. The national funding formula (NFF) allocation for 2026-27 is similarly progressive (1.20 and 1.18).
- **Extra money buys teaching assistants more than teachers.** High-need schools have 14% more teachers per pupil in primary and only 6% more in secondary, but 37% and 90% more teaching assistants. Average teacher pay is no higher in high-need schools, and in secondary schools slightly lower.
- **Progressivity is stable and similar everywhere.** The spending ratio has changed little since 2021/22, and every region and every local authority with enough schools spends more per pupil in its higher-need schools; within-authority primary ratios range from 1.04 to 1.78.
- **Academies are slightly less progressive than maintained schools.** With need, size and location held constant, academies spend 5% (primary) and 6% (secondary) less per pupil than maintained schools, and secondary academies direct less extra spending to need (1.15 against 1.20).
- **Cost modeling is feasible.** England's open data meet every requirement for an education cost function at school level, which would show how large the need differential must be to give high-need schools an equal chance of reaching common goals.
- **Self-generated income runs the other way but is small.** Schools in the lowest-need tenth raise about £523 per pupil from lettings, catering, donations and other sources (primary), against £262 in the highest-need tenth. The difference is a fraction of the need-based difference in public funding.

1. Framing

The framework starts from the purpose of a school finance system: to deliver the resources schools need to give every child an equal opportunity to achieve common, adequate outcome goals (Baker, Atchison & Levin, 2026). Equal opportunity requires differentiating resources by the obstacles pupils face, and the evidence for those obstacles is the relationship between pupil characteristics and outcomes. Step 1a, risk analysis, estimates that relationship (Outcomes = f(Needs, Context)). Step 1b, resource analysis, tests whether resources rise with need after accounting for cost factors that are not need, such as school size, sparsity and London labour costs (Resources = f(Needs, Context)).

England has no constitutional right to education; the duty to secure sufficient schools and the entitlement to free, full-time education arise from the Education Act 1996, and the UK is party to the International Covenant on Economic, Social and Cultural Rights and the Convention on the Rights of the Child. Since 2018-19, core school funding has been calculated through the schools national funding formula. For 2026-27 it allocates about £50.9 billion. Each pupil attracts a basic amount (£4,064 in primary, £5,686 in Key Stage 3 and £6,410 in Key Stage 4), and 18.1% of the total is distributed through additional needs factors: current FSM (£505), FSM at any time in the last six years (£1,210 primary; £1,725 secondary), neighbourhood deprivation (IDACI bands), English as an additional language, low prior attainment and mobility. A lump sum, sparsity funding and an area cost adjustment of up to 18% address costs. Local authorities still set the final formula for maintained schools and academies in their area but must move at least 10% closer to NFF values each year. The pupil premium (£1,550 per FSM6 pupil in primary and £1,100 in secondary in 2026-27) is paid on top (Department for Education, 2025; 2026).

Table 1. Data sources

Domain	Source	Level / years	Use
School register	Get Information About Schools (GIAS)	School; 2026	Type, phase, local authority, location, rurality
Need	School census (spring): FSM, FSM ever 6, EAL, SEN support, EHCP; English Indices of Deprivation 2025 (IDACI, IMD)	School; 2023/24–2024/25	Risk candidates; need index
Outcomes	KS2 and KS4 school performance tables	School; 2023/24–2024/25	RWM expected standard, reading and maths scores; Attainment 8
Workforce	School Workforce in England: FTE teachers, TAs, support staff, pupils; mean teacher pay	School; 2021/22–2025/26	Staffing resources
Finance	Financial Benchmarking and Insights Tool (CFR for maintained schools; AAR for academies)	School; 2021/22–2024/25	Spending and income per pupil
Formula	Schools NFF 2026-27 school-level notional allocations	School; 2026-27	Formula funding per pupil

Note: All data are openly published by the Department for Education and the Ministry of Housing, Communities and Local Government, retrieved October 2026. Mainstream primary, secondary, middle and all-through schools; special schools, alternative provision and independent schools are excluded. Finance data were obtained for 19,056 schools.

2. Risk: which needs predict lower outcomes?

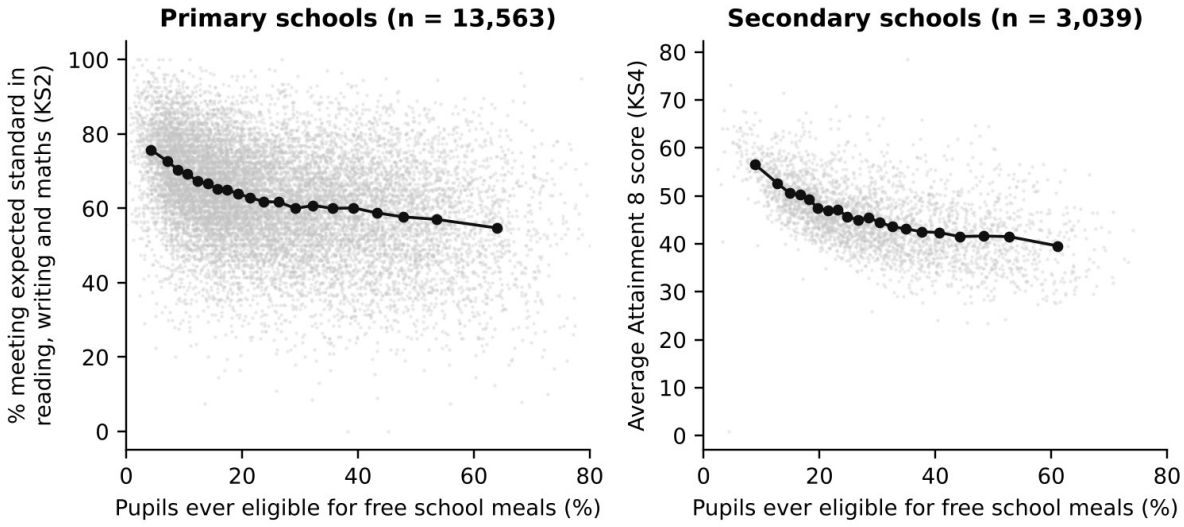
The outcome for primary schools is an index combining the percentage of pupils reaching the expected standard in reading, writing and maths and the average scaled scores in reading and maths at the end of Key Stage 2 (13,563 schools with at least ten pupils). For secondary schools it is the average Attainment 8 score at Key Stage 4 (3,039 schools with at least twenty pupils). Both are averaged over 2023/24 and 2024/25. Selective grammar schools are excluded.

Table 2. Share of variation in school outcomes explained by each candidate need measure (R^2)

Measure	Primary (KS2)	Secondary (KS4)
Current FSM (%)	0.20	0.33
FSM in last six years (%)	0.20	0.32
SEN support (%)	0.12	0.17
IMD, school neighbourhood	0.10	0.10
Education, health and care plan (%)	0.03	0.02
IDACI, school neighbourhood	0.03	0.02
English as an additional language (%)	0.00	0.01

Note: Weighted by number of pupils assessed. All measures predict lower outcomes. Forward selection on cross-validated R^2 (folds by local authority, sign-constrained) selects current FSM and SEN support in both phases; cross-validated R^2 0.22 (primary) and 0.38 (secondary). EHCP share is not used in the need index because pupils with plans are funded separately through the high needs block.

Figure 1. School outcomes and the share of pupils ever eligible for free school meals, 2023/24–2024/25

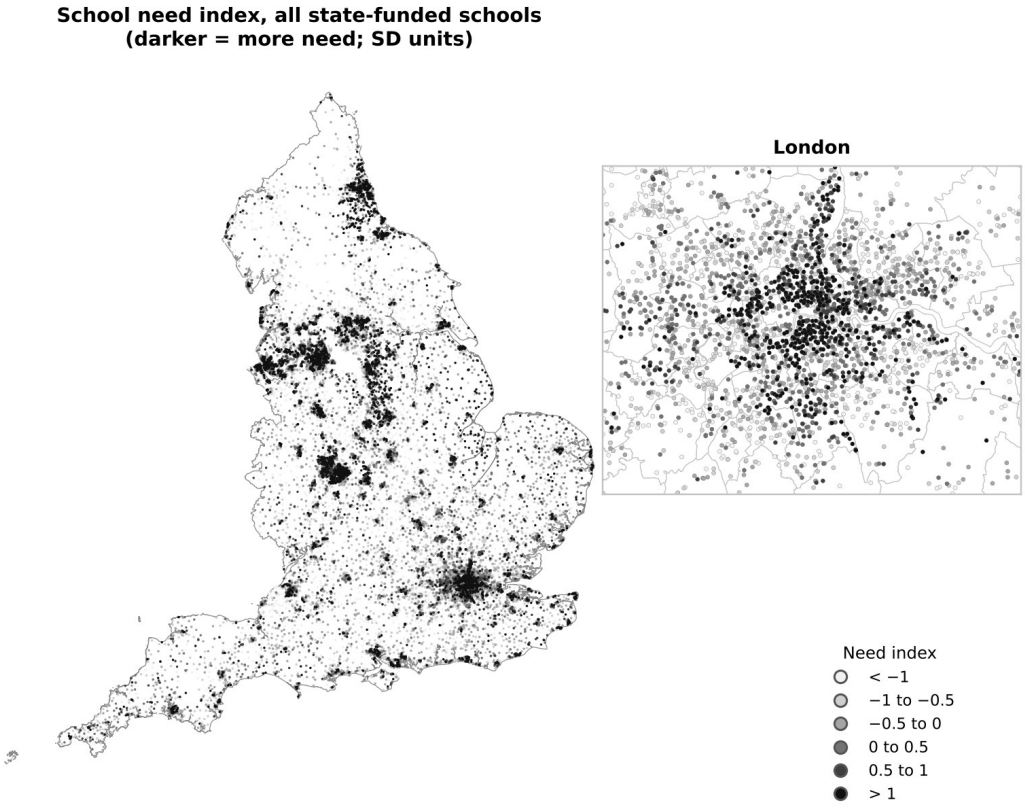


Note: Each grey dot is a school; black points are pupil-weighted means of twenty equal-sized groups of schools.

Poverty is the dominant risk. Primary schools in the lowest-need tenth have 74% of pupils reaching the expected standard; schools in the highest-need tenth, where 56% of pupils have been eligible for FSM in the past six years, have 55%. Average Attainment 8 falls from 54.3 to 38.4. SEN support adds independent explanatory power. English as an additional language explains almost none of the variation, and neighbourhood deprivation measured at the school's location (IDACI, IMD) is much weaker than the characteristics of the pupils actually enrolled.

The need index used in the resource analysis is the predicted outcome shortfall from the selected model, standardised across pupils (separately by phase, so that one unit is one standard deviation). The outcome gap between the 90th and 10th percentiles of need is 1.23 standard deviations in primary and 1.59 in secondary.

Figure 2. School need index, all state-funded mainstream schools



Note: Each dot is a school; darker dots indicate more need. Boundaries: local authority districts.

3. Resources: does funding follow need?

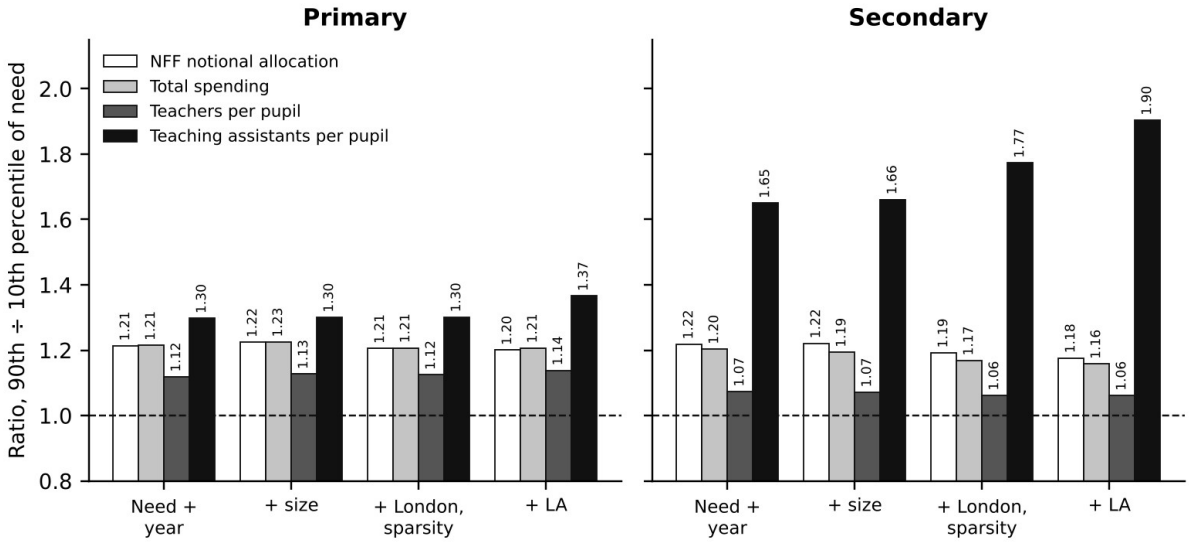
Each resource measure (in logs) is regressed on the need index, with pupil weights, year effects and an academy indicator, and standard errors clustered by local authority, in four nested specifications: need and year only (S1); adding a quadratic in log pupils (S2); adding Inner and Outer London indicators, rural location and sparsity (distance to the third-nearest school of the same phase) (S3); and adding local authority fixed effects (S4). S4 compares schools in the same authority, which share a local formula and labour market. The summary is the ratio of predicted resources at the 90th and 10th percentiles of need.

Table 3. Ratio of predicted resources at the 90th and 10th percentiles of need

Resource	S1	S2	S3	S4
Primary				
NFF notional allocation per pupil, 2026-27	1.21	1.22	1.21	1.20
Grant income per pupil	1.27	1.28	1.26	1.26
Total spending per pupil	1.21	1.23	1.21	1.21
Teaching staff costs per pupil	1.13	1.14	1.13	1.13
Education support staff costs per pupil	1.35	1.36	1.35	1.40
Teachers per pupil	1.12	1.13	1.12	1.14
Teaching assistants per pupil	1.30	1.30	1.30	1.37
All support staff per pupil	1.28	1.29	1.28	1.33
Mean teacher pay	1.01	1.01	1.00	0.99
Secondary				
NFF notional allocation per pupil, 2026-27	1.22	1.22	1.19	1.18
Grant income per pupil	1.25	1.25	1.22	1.20
Total spending per pupil	1.20	1.19	1.17	1.16
Teaching staff costs per pupil	1.08	1.08	1.05	1.05
Education support staff costs per pupil	1.55	1.57	1.59	1.61
Teachers per pupil	1.07	1.07	1.06	1.06
Teaching assistants per pupil	1.65	1.66	1.77	1.90
All support staff per pupil	1.28	1.25	1.29	1.33
Mean teacher pay	0.99	1.00	0.98	0.98

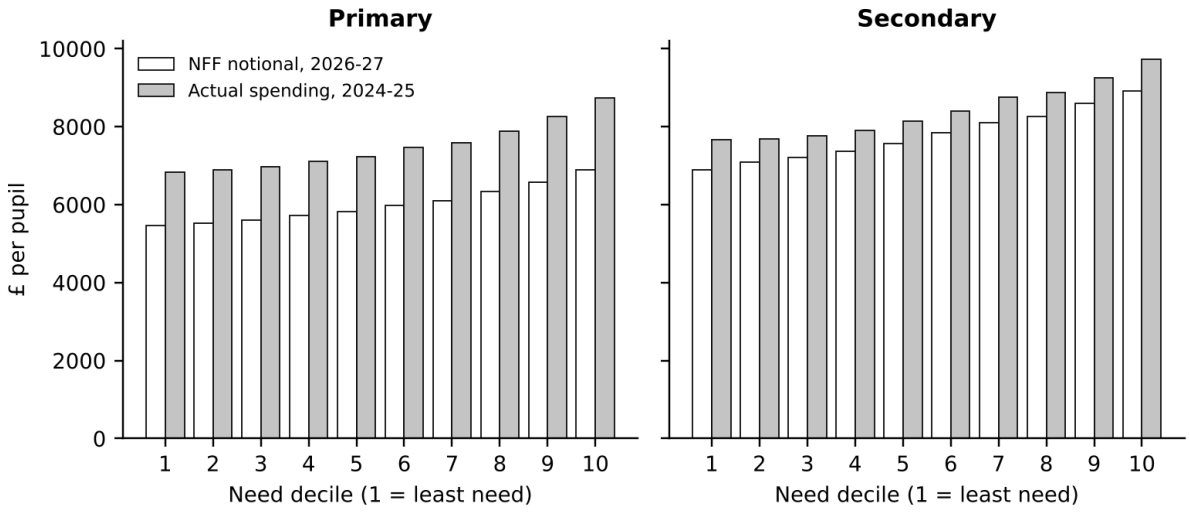
Note: Finance: 15,709 primary and 3,347 secondary schools, 2021/22–2024/25. Workforce: 2021/22–2025/26. NFF: cross-section, 2026-27. Percentiles of need computed across pupils in 2024/25. Secondary includes all-through schools.

Figure 3. Resources at high relative to low need, by phase and specification



Resources rise with need in every specification. In primary schools, total spending per pupil at the 90th percentile of need is 21% higher than at the 10th; in secondary schools, 16%. Controls for size, London and sparsity change little, because England's cost factors are funded largely separately (lump sum, sparsity, area cost adjustment). The ratio for actual spending is close to that of the NFF notional allocation, even though spending also includes the pupil premium and other grants. In 2024/25, average spending per pupil rose from £6,826 in the lowest-need tenth of primary schools to £8,739 in the highest, and from £7,673 to £9,720 in secondary schools.

Figure 4. Formula allocation and actual spending per pupil by need decile



Note: Pupil-weighted means. NFF notional allocations exclude the pupil premium and high needs funding; spending includes all sources.

How the extra money is used matters. Teaching staff costs per pupil are only 13% (primary) and 5% (secondary) higher in high-need schools, while education support staff costs are 40% and 61% higher. In staffing terms, the highest-need tenth of primary schools has 5.26 teachers and 4.88 teaching assistants per 100 pupils, against 4.54 and 3.53 in the lowest-need tenth. Mean teacher pay barely varies with need (0.99 and 0.98), so high-need schools do not pay more to attract or retain teachers, and the share of secondary teachers without qualified teacher status is twice as high in the highest-need tenth (4.5% against 2.2%).

Figure 5. Teachers, teaching assistants and teacher pay by need decile, 2024/25

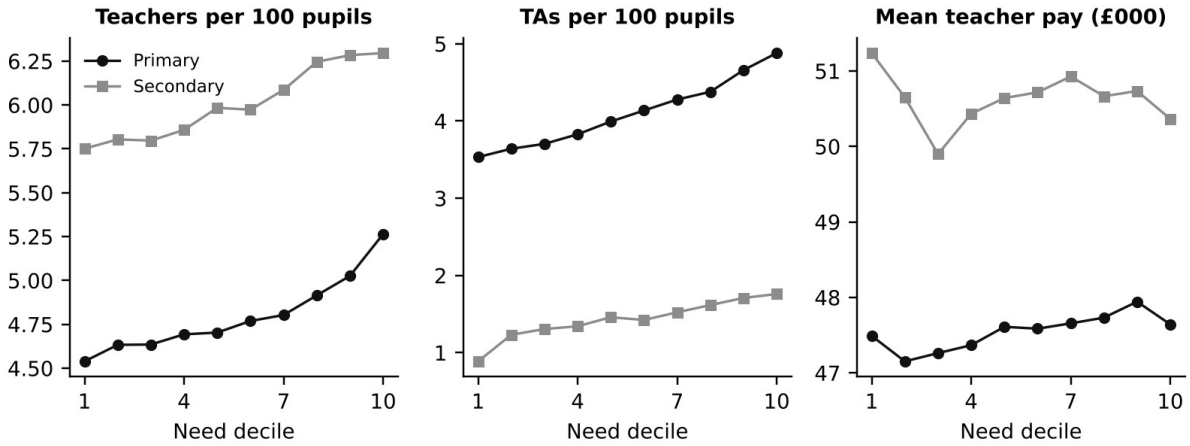
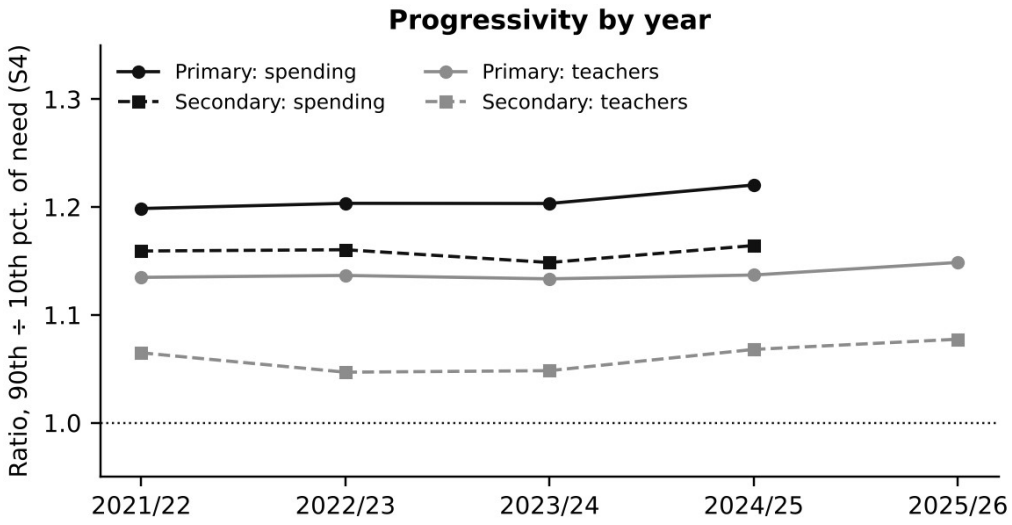


Figure 6. Progressivity of spending and teacher staffing by year (S4)

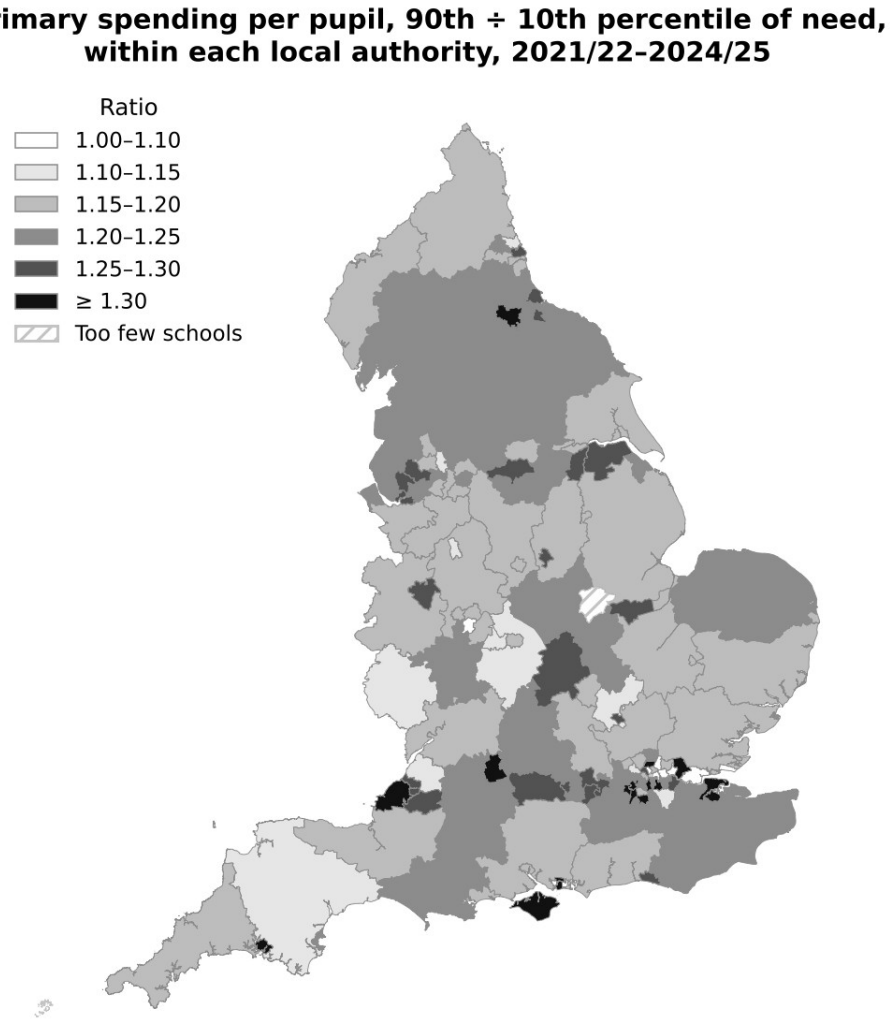


Progressivity has been stable. The S4 spending ratio for primary schools was 1.20 in 2021/22 and 1.22 in 2024/25; for secondary schools, 1.16 and 1.16.

4. Local authorities, regions and academies

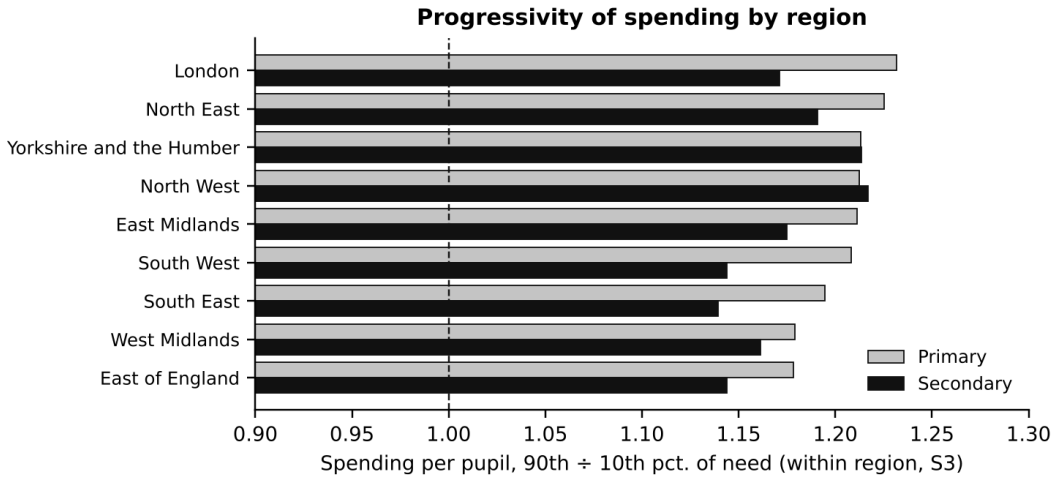
Every region and every local authority with at least 25 primary schools spends more per pupil in its higher-need primary schools. Within-authority ratios (holding size, rurality and sparsity constant) have a median of 1.21 and range from 1.04 to 1.78; 14 of 150 authorities exceed 1.30, and 8 are below 1.10. The least progressive include authorities where nearly all schools serve high-need communities and there is little variation to target, such as Tower Hamlets. Across regions, the within-region ratio ranges only from about 1.18 to 1.23 in primary and 1.14 to 1.22 in secondary.

Figure 7. Within-authority progressivity of primary spending per pupil, 2021/22–2024/25



Note: Ratio of predicted spending per pupil at the 90th and 10th national percentiles of need, holding size, rurality and sparsity constant; authorities with at least 25 primary schools.

Figure 8. Progressivity of spending per pupil by region (S3)

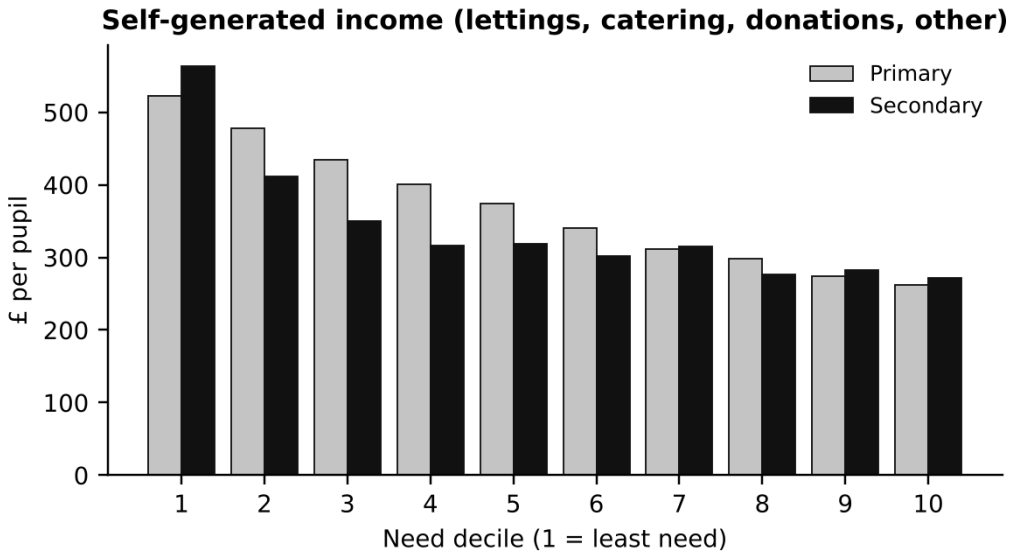


Academies enrol 49% of primary and 84% of secondary pupils. Holding need, size, location and local authority constant, academies spend 5.5% less per pupil than maintained schools in primary and 6.1% less in secondary; part of this may reflect trust-level spending not attributed to schools. Need-based progressivity is similar in primary (academies 1.20, maintained 1.22), but lower among secondary academies (1.15 against 1.20), whose extra resources in high-need schools go more to teaching assistants than to teachers (teacher ratio 1.05 against 1.14).

5. Fiscal neutrality: self-generated income

English state schools cannot charge fees, but they raise income from lettings, catering, trips, donations and other sources. This self-generated income averaged £404 per pupil in primary and £388 in secondary schools. It declines with need: from £523 to £262 per pupil across need deciles in primary schools, and from £564 to £272 in secondary schools. Within local authorities, primary schools in more affluent neighbourhoods raise significantly more. In the framework's terms, this is a departure from fiscal neutrality, but a small one: the gap of roughly £260 per pupil compares with a need-based difference of about £1,900 in total spending per primary pupil.

Figure 9. Self-generated income per pupil by need decile, 2021/22–2024/25



6. Potential for cost modeling (Step 2)

Step 2 of the framework estimates what it would cost for schools serving different pupils, at different scales and in different labour markets, to reach a common outcome goal. The preferred approach is an education cost function: a model of spending as a function of outcomes, pupil need, input prices and structural cost factors, with controls for inefficiency and with outcomes treated as endogenous. Professional judgment and evidence-based panels are complements that translate cost estimates into staffing and programmes. A cost function needs, at the level where resources are deployed, (1) valid outcome measures across years, (2) comparable spending, (3) need measures, (4) input price measures, (5) structural cost factors, (6) enough variation in spending among schools with similar needs, and (7) plausibly exogenous sources of that variation to use as instruments.

Table 4. Data requirements for an education cost function, England

Requirement	What is available openly	Assessment
Outcomes	KS2 (2022–2025) and KS4 Attainment 8 (2022–2025; pre-2020 series also published), school level. Progress 8 is unavailable for 2024/25 and 2025/26 because the 2020 and 2021 KS2 tests were cancelled	Strong. Value-added at KS4 resumes once KS2 baselines exist; KS2 has no prior-attainment baseline
Spending	FBIT expenditure and income per pupil for 19,056 schools, 2021/22–2024/25; CFR and academy accounts published further back	Strong, with two caveats: financial-year versus academic-year reporting, and trust central costs
Need	FSM, FSM6, SEN support, EHCP, EAL, mobility (school census); IDACI and IMD	Strong. Pupil-level data (National Pupil Database) available on application
Input prices	School-level mean teacher pay; NFF area cost adjustment; London pay bands	Moderate. Observed pay reflects choices; a comparable-wage index from outside teaching (e.g. ASHE) would be needed
Structural costs	Enrolment, phase, rurality, distance to nearest schools, split sites, PFI	Strong
Spending variation	With need, size, London, sparsity and local authority held constant, residual variation in spending per pupil is about 12% (1 SD)	Sufficient for estimation
Instruments	NFF formula changes, minimum per-pupil levels and funding floor, differences in local authority formulae across boundaries, academy conversion timing	Promising. The 2018 NFF transition and the minimum per-pupil levels changed schools' funding for reasons plausibly unrelated to their own outcomes

Note: Assessment based on the open data used in this brief. The National Pupil Database and school-level workforce microdata are available to accredited researchers through the DfE and ONS secure research service.

England is the strongest candidate for cost modeling of the cases analysed so far. Every requirement is met from open data at the school level, for about 19,000 schools, over several years. Two design issues need attention. First, outcomes must be measured on a basis that is not distorted by the pandemic: KS4 results for 2020 and 2021 were teacher-assessed and KS2 tests were cancelled, so a model should use 2022 onward, with pre-2020 years for robustness. Second, academy trusts pool resources across schools; a model at trust level, or one that apportions central spending explicitly, should be compared with the school-level model.

A cost function for England would answer the question this brief leaves open: whether schools at the 90th percentile of need, which spend about 20% more per pupil, would need 40%, 60% or more to reach the same expected-standard rate or Attainment 8 score as low-need schools. The answer would give the NFF additional needs factors an empirical basis, which they currently lack: the factor values were set in 2018 largely by reference to existing local authority formulae, not to the cost of reaching outcome goals (Department for Education, 2017).

7. Implications

- **A 20% funding differential is modest against a gap of more than one standard deviation.** England's formula is clearly progressive and consistently applied, but whether 20% is enough is a question for cost modeling (Step 2), which would estimate the spending required for high-need schools to reach common outcome goals.
- **The formula weights do not match the risk evidence.** FSM and SEN support predict outcomes most strongly; EAL and neighbourhood IDACI predict them weakly. The NFF funds EAL at up to £1,630 per secondary pupil and allocates IDACI funding by the pupil's home area, while SEN support is funded only indirectly through low prior attainment. A risk-based recalibration of the additional needs factors would target more funding at the characteristics that matter most.

- **Extra funding buys support staff more than teachers.** High-need schools have many more teaching assistants but only slightly more teachers, at no higher pay, and more teachers without qualified status. Targeted pay or retention incentives for teachers in high-need schools would address the type of resource as well as its amount.
- **FSM expansion should not dilute targeting.** From September 2026 all Universal Credit households qualify for free meals, but the pupil premium and NFF deprivation factors will continue to use the narrower targeted measure. Keeping a precise poverty measure for funding purposes preserves the targeting found here.

Limitations

- Finance data combine maintained schools' financial-year CFR returns and academies' academic-year accounts; trust-level central spending is apportioned by the Department and may not be fully attributed. High needs top-up funding for pupils with EHCPs is included in spending.
- Outcomes are school-level averages for two years and cannot separate school effects from intake beyond the measured characteristics. Prior attainment is not used as a risk factor because it is itself an outcome of earlier schooling.
- Special schools and alternative provision, which serve many of the highest-need pupils, are excluded.

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