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Research Report

A technical peer review of MHCLG's suggested approach to allocating funding between English local authorities

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A technical peer review of MHCLG's suggested approach to allocating funding between English local authorities

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Copy-edited by Rachel Lumpkin

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This report was commissioned by the Ministry of Housing, Communities and Local Government (MHCLG) as part of the quality assurance process for the design of an updated local government finance system for England. The work for this review was undertaken during May and June 2025. The views stated in this report are those of the authors only, not the Institute for Fiscal Studies (IFS), which has no corporate views, nor necessarily those of MHCLG, and its ministers and officials. Likewise, the design of the local government finance system is the responsibility of MHCLG, not the authors of this report.

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Executive summary

In any system for funding local government, there are inherent trade-offs between competing policy objectives. We have discussed these at length in a recent report ([Phillips, 2024](#)), and in our [submission](#) to the Ministry of Housing, Communities and Local Government (MHCLG) December 2024 consultation on the principles and objectives of reform. This report does not consider these broad policy objectives. It focuses on technical aspects of the design of certain elements of the proposed funding system: area cost adjustments; the council tax resource adjustments; assessments of spending needs outside social care; and the overall approach to bringing these together through a system with equalisation. We assess the reasonableness of the approaches proposed by MHCLG, making recommendations for robustness checks and potential improvements that could be made in the short, medium and longer term. By short term, we mean prior to the confirmation of final plans for local government finance reform; by medium term, we mean within the next two to three years at the very latest; and by longer term, we mean within the next two to three years if possible, but recognise that this may not be practical.

Summary of recommendations

Short term

Consider whether the use of log-level specifications in most regression analyses introduces any issues in prediction, particularly with the distribution of predicted values

Use log hourly earnings as the dependent variable in the labour cost adjustment (LCA) regression, drop the control for hours worked, but retain the control for full-time/part-time status of job.

Test the robustness of estimates to winsorising earnings (i.e. dropping the top X percentiles of earnings nationally before estimating the model) and to dropping the control for whether the individual is working in the private sector as opposed to the public sector.

Consider using potential experience instead of age in the LCA regression model.

Include interaction terms between age, or potential experience, and a dummy for 'high-skilled' occupations or industries in the LCA regression model.

Cluster standard errors at the individual level, and include year dummies in the LCA regression, to recognise that the Annual Survey of Hours and Earnings (ASHE) data are a short, wide panel dataset.

If necessary, remove one of the three shares from the rates cost adjustment (RCA) regression, if this introduces a problem of perfect collinearity.

In calculating the traversal factor, down-weight the journey time to the furthest-away of the set of destination Lower Super Output Areas (LSOAs) in estimating the average journey time from each origin LSOA.

Test the sensitivity to and use of alternative measures of remoteness, including the population threshold and journey times to a small set (rather than one) 'large' settlement.

Check that the local authorities (LAs) sampled and used in the Subjective Analysis Return (SAR) have LCAs and RCAs that are representative of the distribution nationally.

Consider whether the type of travel captured in the National Travel Survey is of the kind for which dispersal and traversal adjustments were intended.

Test further with councils the proportion of working hours that LA employees spend travelling.

Further consider RCA weights for adults' and children's services, and application of accessibility or remoteness adjustments for certain expenditure types.

Include the population aged 18–64 as a share of the population aged 18+ (rather than of all ages) in estimating eligibility for working-age council tax support (CTS).

Test the sensitivity of estimates to including the proportion of properties in Band E and above in a council area in the CTS regression.

If including an adjustment for council tax non-collection: take a different approach to missing data in the estimation; include the proportion renting privately, rather

than all renters (private and social) as an explanatory variable; and check that no areas are predicted a collection rate of more than 100%.

Consider whether different measures of deprivation may better capture eligibility for working-age CTS, and check whether, for example, the income subdomain has more explanatory power than overall deprivation.

Consider carefully the implicit weights applied to observations in regression analysis, which may differ when the dependent variable is transformed.

Express spending figures in real terms before averages are taken across years.

Carry out further checks to understand how sensitive the estimates are to the inclusion of specific years in expenditure-based regressions, or to taking different approaches to splitting spending by tier.

Rather than include a control for the proportion of one-person households in the Foundation Formula, consider using average household size instead.

Test the sensitivity of Foundation Formula allocations to using different weights for non-resident client groups, and moving to net – as opposed to gross – commuter flows.

Consider using commuter data from Census 2011, instead of Census 2021.

Check whether estimates are robust to using 2017–19 data from the Great Britain Tourism Survey, and to using different definitions of day visitors.

Explore how sensitive the councils' funding allocations are to the precise control totals used, and how these control totals are likely to change over time.

Explain the trade-offs involved in decisions over, for example, the notional council tax level, 100% equivalisation for needs, and how key aspects of the system are projected forwards, and explicitly justify the choices made.

Consider allowing some councils (e.g. those whose actual tax rates are substantially below the assumed notional rate, or where the actual tier split is very different to the national average) greater flexibility to increase council tax rates in the coming years.

Medium term

Investigate whether sample sizes and the controls for occupation–industry mix are sufficient to estimate LCAs for lower-tier areas.

Consider how LCAs relate to London weighting, and to national pay bargaining for in-sourced services.

Consider examining the earnings of LA and commissioned services workers, to better understand the most appropriate part of the wage distribution to base LCAs on.

Investigate other approaches to accounting for areas where the presence of central business districts may distort estimates of the RCA.

Consider further the delivery model of different services, including whether public transport, and journeys that cross LA boundaries, are appropriate for inclusion in the measures of dispersal and traversal.

Seek more evidence on the nature of additional costs that councils face in relation to remoteness, to better understand whether the proposed measure is likely to proxy for these, and how to weight this factor.

If including an adjustment for council tax non-collection, consider including year dummies and interaction terms, and CTS scheme characteristics, in any collection rate regression.

Consider whether it would be appropriate to weight observations differentially in council tax regression analyses, for example, by population or tax base.

Adopt different weights for non-resident client group populations in the Foundation Formula, even if these must be based on judgement.

Use net – as opposed to gross – commuter inflows in the Foundation Formula client groups.

Be transparent with stakeholders about the limitations of an expenditure-based approach, and justify the choice of years included.

Take an alternative approach to missing data in spending needs regressions to avoid dropping information unnecessarily.

Report how sensitive the estimated spending needs shares for individual LAs are, and not only the overall model fit, when comparing models.

Consider whether control totals should be varied from historic spending shares, either to reflect evolving demands or to support shifts in patterns of spending.

Longer term

Consider whether there is a data-driven way to focus on those occupation–industry groups that are most relevant for LAs' labour costs when estimating the LCAs.

Consider undertaking complementary analysis of labour costs using several suggested alternative datasets.

Incorporate any more timely data on travel-to-work patterns as these become available.

Consider using assumed (rather than zero) discretionary discounts and premiums in the council tax resource adjustment, particularly if their use becomes more significant over time.

Consider how council tax tier splits will be kept up to date, especially in the context of local government reorganisation.

Consider and communicate to stakeholders how up-to-date measures of deprivation will be reflected in future funding allocations.

Consider collecting subcouncil-level data for non-social-care services to support more robust non-social-care spending needs assessments.

Explore creating a panel dataset for estimating spending needs regressions.

Consider ways to make aggregate client groups in the lower-tier Foundation Formula less sensitive to reorganisation.

1. Methodology of our review

Researchers from the Institute for Fiscal Studies (IFS) have been commissioned by the Ministry of Housing, Communities and Local Government (MHCLG) to undertake a peer review of a number of technical elements of the upcoming reforms to the local government finance system. This report sets out their understanding of those technical elements, assesses the technical proposals' reasonableness and fit with MHCLG's stated objectives and principles, and makes suggestions for short- and longer-term changes and sensitivity checks.

The review has been carried out based on documentation supplied by MHCLG, rather than the published consultation documents, and so may assess options that are not those proposed in the consultation. The information provided included descriptions of the proposed methodology for: the resource adjustment; control totals; the benchmark model; the area cost adjustments (ACAs) – the overall approach, labour cost adjustment (LCA), rates cost adjustment (RCA) and approach to business density; and the Foundation Formula. These included detailed calculation steps, a brief description of some of the relevant datasets, regression outputs for the specifications proposed (although not generally for alternative specifications) and results from some model tests. We discussed interim findings of the review with MHCLG (23 May), and received some comments on a draft of sections of this report (submitted on 6 June and 27 June). We discussed these (on 7 July) and subsequently revised the report in some places for clarity of exposition, and to reflect some additional information from MHCLG, although we did not make material changes to our reflections and recommendations. This revised draft including the Executive Summary was submitted to MHCLG on 21 July. MHCLG then made a minor correction to information it had previously provided to us on the dispersal measure used in ACAs on 22 July. This final (but pre-copyedited) version of the report was submitted to MHCLG on 6 August.

Looking ahead, we recommend that MHCLG consults upon and undertakes an independent technical review of any future major changes to the design of different elements of the reformed funding system. In the meantime, engagement with the academic community would help build both capacity and interest in engaging with MHCLG on such technical issues. We also recommend

that MHCLG clearly documents all analytical decisions and the rationale for them as they are taken, to aid scrutiny and future technical reviews.

Finally, please note that all opinions are those of the authors only – the IFS itself has no corporate views on these issues, and MHCLG officials and ministers may take different views to the authors. In what follows, we use the terminology ‘we recommend’ where we are confident that there is a strong technical justification for the proposed action or change of approach. We avoid using this term (and prefer the terms ‘suggest’ or ‘consider’) where we perceive the case to be less clear-cut: where the pros and cons are more finely balanced; where further investigation may be required; or where MHCLG will have more information as to the resource implications of a suggested change.

The report proceeds as follows. Chapter 2 reviews suggested approaches to ACAs. Chapter 3 considers approaches to assessing revenue-raising capacity, spending needs and allocating funding. At the start of each chapter, we provide an overall assessment of the reasonableness of the proposed approach. At the end of each subsection, we include a list of recommendations, split into those we consider should be implemented (or considered) in the short, medium or longer term as resources and policy developments allow. By short term, we mean prior to the confirmation of final plans for local government finance reform; by medium term, we mean within the next two to three years at the very latest; and by longer term, we mean within the next two to three years if possible, but recognise that this may not be practical.

One issue that cuts across both these chapters is the use of log specifications in regression analyses to address issues of heteroscedasticity, normality, linearity, etc. While we support this, such specifications can introduce another problem when it comes to predictions. In particular, because $\log(\text{mean}(x))$ is not equal to $\text{mean}(\log(x))$, estimating relationships from a log–level specification, predicting the log of a variable and then taking the exponent of this will result in a distribution of predicted values that differs systematically from the original distribution (with a predicted mean that is lower than the actual mean, for instance). **We believe this issue merits careful consideration, and would be happy to discuss it further.**

2. Review of the area cost adjustment methodologies

Different local authorities (LAs) face different input costs, reflecting differences in local wages, property rents, and physical and human geography affecting, for instance, journey times. Area cost adjustments attempt to estimate these differences and adjust the overall assessment of LAs' spending needs (which also accounts for differences in demands for different services) to account for them. In this chapter, we provide an assessment of the reasonableness of proposals for: the labour cost adjustment; the property cost adjustment; and geography-based adjustments for accessibility and remoteness.

Overall assessment

Our overall assessment is that, taken together, the proposed approaches for ACAs are reasonable. However, there is scope for both short- and longer-term improvements in the approaches and how they are communicated to stakeholders.

Labour cost adjustment

The idea of adjusting for differential labour costs is a sound one. Doing this in practice though is difficult, as one needs both to define the relevant pool of labour from which LAs (and their commissioned serviced providers) are recruiting from, and then estimate the going rate of pay for this pool of labour.

The proposed approach uses a large employer-sourced survey of wages – the Annual Survey of Hours and Earnings (ASHE) – and aims to measure the mean weekly earnings by LA area, stripping out the effect of key observable job and individual characteristics, such as age, sex, hours of work, sector and occupation. Comparing workers based on their place of work (rather than residence) means these estimates implicitly account for commuting between areas.

This is a reasonable approach overall, but it would be preferable to use hourly earnings and control for full- and part-time status in the regression. The approach also comes with strong assumptions. First, it is assumed it is the 'mean' wage that is of most relevance to LAs' labour costs; consideration should be given as to whether the median, which will be less affected by outliers in the sample, would be

more appropriate. Second, there is a risk of ‘over controlling’ for observable factors that could affect the pool of workers that LAs are able to recruit from.

Results have been shown to be reasonably robust to some factors. Sensitivity should be tested to winsorising the highest earnings, and interactions between age and employment in high-skilled occupations (given the stronger age gradient in earnings for these industries).

We also recommend benchmarking mean and median earnings with information from HMRC’s real time information system. In addition, we recommend undertaking the analysis using hourly pay as opposed to weekly pay – the coefficients on hours would then control for differences in hourly pay rates between those working different numbers of hours, rather than differences in weekly pay. And we agree with MHCLG suggestions to include information on apprenticeship status, and additional flexibility in controls for age and hours (albeit potentially using splines rather than additional polynomial terms).

A key shortcoming of using the ASHE as the main data source is that it lacks information on education. In the longer term, we suggest exploring the use of ASHE data matched with data that include information on education, such as census data, and for younger adults, the Longitudinal Education Outcomes (LEO) dataset.

Property cost adjustment

It also makes sense to account for variation in property costs. MHCLG’s proposed approach uses detailed property-level data on assessed rental costs and property characteristics from the Valuation Office Agency (VOA), in effect aiming to measure mean rental cost by LA area, stripping out the effect of observable property characteristics and local ‘business density’.

This is a reasonable approach but also comes with strong assumptions. In particular, the control for local ‘business density’, which is aimed at stripping out the high values found in ‘central business districts’, may over-control for this for certain LAs or certain kinds of properties (such as LA headquarters, which might reasonably be expected to be in high-density areas with good transport links). Alternative approaches, such as controlling for the top few percentiles of the density distribution only, are worth considering and testing.

Accessibility and remoteness

Adjustments for accessibility (i.e. differences in travel time to provide services, which affect the cost of labour) and remoteness (i.e. other indirect costs associated with the geography of areas, including access to major markets) are relatively new

additions to the ACA and make sense. The proposed approaches use estimated travel times between neighbourhoods and to smaller and larger economic hubs, to proxy these factors, and then use information on the share of time staff report travelling to determine what weight to apply to the factors in the overall ACAs.

These are reasonable approaches in general. However, these implicitly build in models of how services are delivered across places and may be affected by data issues. They are also complex, and descriptions of these approaches would benefit from a focus on making exposition as clear as possible.

Accessibility is measured via two separate subcomponents: ‘dispersal’, which is the average travel time from each neighbourhood (LSOA) to its nearest small ‘hub town’; and ‘traversal’, which is the average travel time between groups of neighbourhoods (LSOAs) on a potential service route. The former is designed to capture time spent travelling between LA offices and households, with the example of children’s social-care visits given; whereas the latter is designed to capture time spent travelling between households, with the example of waste collection given. The weights given to ‘dispersal’ and ‘traversal’ in the overall accessibility measure are not clearly specified but should be informed by how LAs actually deliver services (e.g. how common it is for staff to travel from offices, versus on routes between households).

In the short term, we recommend that journey lengths to the farthest-away set of destination LSOAs are down-weighted in traversal analysis, to reflect the fact that services are likely to utilise the shorter rather than longer service delivery routes. In the medium term, we suggest further engagement with LAs on the delivery model of different services, including whether public transport, and journeys that cross LA boundaries, are appropriate for inclusion in the measures of dispersal and traversal.

Remoteness is measured by a population-weighted average of travel time from each LSOA in an LA area to a large ‘hub town’ with a population of over 70,000. In the short term, we recommend that consideration should be given to measuring travel time to the nearest two or three large ‘hub towns’, and for testing the sensitivity of results to population thresholds (e.g. 50,000 instead of 70,000); there is likely to be a greater choice of suppliers when more than one large town is nearby. In the longer term, we suggest undertaking research on how prices for key inputs are affected by remoteness (and other factors); while remoteness may reduce the number of potential suppliers (increasing costs), it may also reduce the number of other potential purchasers, including other LAs (reducing costs).

Labour cost adjustment

The broad conceptual approach

The LCA is intended to capture differences across areas in the ‘going rate’ paid to similar workers, and hence the labour costs facing LAs for both directly employed staff, and in commissioned services delivered locally. MHCLG proposes to estimate this using an individual-level regression of weekly earnings with controls for worker and job characteristics, for those workers included in the ASHE. Then, MHCLG proposes to use the estimated coefficient on an LA dummy included in the regression (i.e. the area fixed effect) directly as the LA-level cost index. This captures differences in average (mean) weekly earnings between LAs for the sampled workers, stripping out the effects of differences in worker and job characteristics.

To note, the motivation for including LA fixed effects in this regression (and others used in estimating ACAs) is different to that in the multi-level regression models used for estimating social-care spending needs. In the latter case, the aim is to estimate other coefficients based only on within-LA variation in spend and not between-LA variation (which might reflect an LA’s policies, level of historic funding, etc.). Here, the motivation is instead to recover the part of any differences in wages for otherwise similar individuals (by sex, age, occupation, etc.) who differ only in the LA in which they work.

In principle, it is reasonable to attempt to control for some observable characteristics of workers. This is necessary in order to isolate differences in the wages commanded in different parts of the country by ‘equivalent’ workers (i.e. those with the same observable characteristics). It also controls for the fact that with small sample sizes, the random sample of workers included in the ASHE may not be representative of each LA’s overall workforce.

However, differences in the composition of workers across areas may also affect the ability of LAs to hire equivalent workers, and will drive differences in wages for ‘equivalent’ workers between areas. For instance, if an area has an older population and older workers typically command higher wages, the LA’s average labour costs will be higher if they cannot hire disproportionately among their younger (cheaper) residents. The extent to which this is true will depend on the scale of LA hiring relative to the local labour market, and who they are competing with for labour. Similarly, controlling for occupation may allow for better comparison between equivalent workers, but occupational mix at an area-

level (and particularly the availability of work in alternative occupations) may mean that LAs are competing with different alternative occupations, and may drive differences in wages for equivalent workers between areas. This means there is some risk of over-controlling.

Geography of local labour markets, and changes since 2013–14

The purpose of applying an adjustment for labour costs is because different LAs are able to recruit from different local labour markets, in which ‘equivalent’ workers are able to command different wages. The most meaningful economic geography for wages would be the relevant labour market for an LA – the pool of workers from which they are able to recruit. In calculating the area fixed effects based on each worker’s place of work, the proposed approach focuses on the wages commanded by the set of sampled workers who were working within each LA’s administrative boundaries. This is preferable to focusing on the wages of each area’s residents (and defining the fixed effects by place of residence) as it accounts for existing commuting patterns.

One important difference between the proposed approach and the 2013–14 ACA methodology is that the latter used county (upper-tier) areas. Using each LA’s administrative boundaries is intuitively appealing as this is likely to correspond to the area in which most of an LA’s services are delivered, and its staff employed by workplace. However, there are still two key trade-offs to be made in choosing the level of geography.

The first is between specificity (how closely to match the geographical area in which an LA’s services are delivered and associated staff employed) and the smaller sample sizes available for more narrowly drawn areas, which will reduce the robustness of estimates (e.g. due to the effects of ‘outliers’ in small samples). This interacts with questions over how many years of data to use, which we turn to at the end of this section (in ‘ASHE data and alternative data sources’).

The second trade-off is between specificity and the risk of estimates being distorted by particular local factors, which do not in fact capture real differences in councils’ labour costs. For instance, wages by workplace were markedly higher in the area of the former Copeland Borough Council than in other parts of Cumbria. This may reflect the concentration of work in a specific high-paid industry (nuclear), rather than higher general wages. Without sufficient controls, this would be reflected in a higher estimated LCA for Copeland council, even if workers in other sectors (and employed directly or indirectly by the council) did

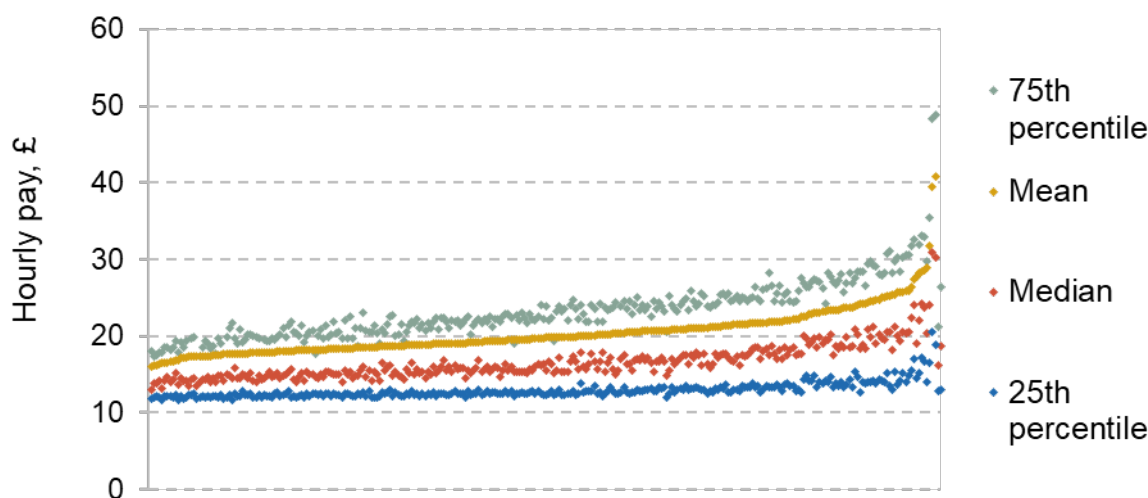
not command higher wages. While this may also be a problem for some upper-tier areas, it is a more acute concern at smaller geographies where there is a greater risk that an area may be dominated by a particular industry. Whether moving to smaller geographies (from upper to lower tiers) is an improvement depends partly on the extent to which the ASHE data allow for detailed controls for occupation–industry mix. **We recommend that MHCLG investigates whether the controls for occupation and industry in the ASHE data are sufficient to estimate LCAs for lower-tier areas.**

Another feature of the 2013–14 approach was an adjustment made to some areas, with those surrounding London divided into fringe and non-fringe, and Outer London split into two to reflect different pay pressures. The LCAs resulting from the new approach may not align with the degree of London weighting in LA pay scales (with separate scales for inner and outer London). However, the new approach will reflect the extent to which equivalent workers are, in general, able to command higher wages for the same work if they work in different parts of the country (including different London boroughs and the South East). MHCLG may wish to consider explicitly how LCAs relate to London weighting, and to national pay bargaining for in-sourced services. Looking ahead, consideration may need to be given to any impact the introduction of a fair pay agreement for workers involved in adult social care could have.

MHCLG proposes to remove the arbitrary judgement-based lower limits that were a feature of the 2013–14 LCA. This saw all LAs with estimated LCA values below a specific threshold raised to 1. There was no good reason to do this under the old methodology and this change is a very welcome improvement.

Differences across the pay distribution

The approach utilised by MHCLG is based on differences in the *mean* earnings of workers between local areas. However, research by [Overman and Xu](#) shows that differences in mean earnings across areas are driven to a large extent by the top of the wage distribution, and there is little variation in wages at the bottom of the wage distribution. Hourly earnings of the bottom 10% of earners are essentially the same across areas – which may be unsurprisingly given the bite of the minimum wage – and the same is true for hourly earnings of the bottom 25%. Variation in median earnings is also substantially lower than variation in mean earnings. Figure 1 shows that this pattern can also be observed in the published AHSE data.

Figure 1. Distribution of hourly pay across areas of England

Note: Gross hourly pay, excluding overtime, by lower-tier LAs in England.

Source: ONS, 2024 provisional edition of [ASHE Table 7.5a](#).

If a 'typical' LA's labour costs reflected wages at, for example, the 25th percentile or median of the earnings distribution, then the differences in the effective wages they face and appropriate LCAs would be smaller than if most of a typical LA's labour costs reflected wages of those at the top of the income distribution, where there is greater across-LA variation. In practice, the appropriate LCA may differ between a council's direct employees (who may be employed at close to the median wage) and those indirectly employed (such as social-care workers and cleaners, who may typically be lower paid). The costs of employing the latter group of workers may vary less between areas. **We suggest that MHCLG considers how differences in pay across LAs can vary for different parts of the earnings distribution.** MHCLG could examine the earnings of LA and commissioned services workers, to better understand the most appropriate part of the wage distribution to base LCAs on. Other measures (such as the median) may be more representative of LAs' labour costs than mean earnings, which can be significantly affected by the top of the earnings distribution.

Regression specifications and control variables

MHCLG proposes to regress log weekly pay on the hours worked by an individual that week, and a range of other individual and job controls, as well as the aforementioned LA dummies.

Instead, reported weekly pay could be divided by the reported hours worked, to form a measure of hourly wage. This is likely to be a better measure of the cost of labour faced by a local employer, as weekly pay will reflect hours worked as well as wages. **We recommend that log hourly pay is used as the dependent variable in the regression, and controls for the number of hours worked are dropped from the regression. We recommend continuing to include a control for full- or part-time work in the regression model, as hourly compensation does, in practice, vary between full- and part-time workers.**

Using log pay, instead of a raw measure of pay, has several advantages. It is generally preferred for this purpose, given that wage distributions are typically skewed, and that the relationships between pay and worker characteristics are often better captured by a log–linear regression. Using log pay also reduces the impact of outliers. Given small sample sizes for some local areas, it may also be appropriate to winsorise pay, for instance dropping the top percentile nationally of weekly or hourly pay observations. **We recommend that this is carried out as a robustness check.**

In relation, the other proposed controls are:

- Sex. The inclusion of this is uncontroversial in such regression models.
- Age, and age-squared. These are acting as proxies for years of potential labour market experience. We suggest considering instead the inclusion of a measure of potential experience (age – 18) and the square of this variable. This would be more similar to approaches taken in the academic literature, and would better control for the rapid growth in earnings early in young adults' working lives.
- Full set of occupation–industry groups. These dummy variables are intended to control for the effect of being in a specific industry or occupation (and to account for the interaction between these) and so to compare workers doing similar work. It would be helpful to understand how fine-grained these groups become. If there was a very high degree of concentration of some occupation–industry groups within specific LAs, this presents a risk of over-controlling, and may result in area fixed effects being imprecisely estimated. **In the longer term, we suggest that MHCLG considers whether there is a data-driven way to focus comparisons on those workers who are most similar to those delivering council services.**
- Dummy for whether someone works in the private sector. This will help to control for average differences in non-wage benefits between public and

private sector workers, such as paid leave or pension contributions. These non-wage benefits are not captured in hourly pay, but they do form part of an employee's compensation, and contribute to an employer's labour costs (i.e. they cost something to provide). This is also likely to be highly co-linear with occupation–industry groups (although not perfectly, as there will be some private sector workers in health and education, and some public sector workers in financial services, for instance). **We recommend robustness is tested to dropping the private sector dummy from the model.**

MHCLG also proposes several further variables that could be included.

- Hours squared variable. As well as power terms, MHCLG could consider including splines of hours. As discussed above though, we think it would be better to use hourly pay as the dependent variable, and then include indicators of full- and part-time status.
- Apprentice. We agree that including a control for whether someone is an apprentice would be reasonable, although we would expect this to make little difference in practice.
- Quartic in age. Including some higher-order polynomials in age (or potential experience as described above) would be sensible, as there is some evidence that a square term alone may not be sufficient. MHCLG could also consider using splines.
- **We recommend including interaction terms between age (or potential experience) and any higher-order terms with a dummy for 'high-skilled' occupations or industries.** This would capture the fact that some occupations have different earnings trajectories.

While the documentation describes the LCA values as 'smoothed', our understanding is that observations from multiple years are being included in the same regression model as one, big, pooled OLS. This is problematic for two main reasons.

- First, there is repeat sampling of individuals in the ASHE. Selection into the sample depends on the last two digits of an employee's National Insurance number, which does not vary over time, so an employee will be selected into the issued sample each year that they hold an employee job, generating repeated annual observations for these individuals. Failing to reflect this will mean estimated standard errors are incorrect.

- Second, the sample size by LA may vary each year, and this will not be addressed by using the ASHE-provided weights.¹ In effect, this means that areas that, by chance, have more observations from later years in the sample period would appear to have higher average wages as nominal wages increase over time.

As with the potential collection rate regression discussed in Chapter 3, we recommend that the regression specification is modified to recognise explicitly that there is a time dimension in the dataset – it is a short, wide panel. In particular, to deal with this, **we recommend that standard errors are clustered at the individual level, and year dummies are included in the regression.**

ASHE data and alternative data sources

MHCLG proposes to use the ASHE, a 1% sample of employees from HMRC PAYE records, and to estimate the model using three years of data (2022, 2023 and 2024). This has relatively good coverage of local areas, is updated annually and available relatively quickly, and includes information on earnings, hours worked, and basic individual characteristics (such as age and sex) and job characteristics (such as industry and occupation). The ASHE only includes payrolled jobs, so will reflect all earnings for an individual across potentially multiple jobs, but will miss any earnings from self-employment. We do not see this as a major limitation.

A more severe limitation is that it does not contain any direct measure of education or skills. Workers' qualifications are measures of their human capital and would be expected to be highly predictive of their wages. Indeed, there is evidence that most differences in wages between areas are driven by differences in skills. Missing proxies for workers' skills is a major limitation of using the ASHE, and of the proposed regression model.

Given the alternatives available – and particularly the need for relatively large sample sizes for local areas – the decision to use the ASHE is reasonable.

¹ To note, analysis using the ASHE dataset should be using the ASHE-provided design weights (*calwght*) which account for non-response, and should ensure the sample is representative of UK employees by sex, broad age group (16–21, 22–49, 50+), occupation (nine groups) and region (London and South East, and the rest of the UK) – but not LA.

However, we suggest that in the longer term, MHCLG undertakes some complementary analysis using alternative datasets. In particular:

- Linked ASHE–Census 2011 would allow for a regression controlling for education as measured in 2011. This would not be perfect – it would miss qualifications achieved after 2011 and would only be a reasonable proxy for qualifications for workers likely to have completed education by this date – but it would be worth exploring, given the potential importance of education in explaining geographical variation in wages.
- The Department for Education’s LEO dataset is population-wide rather than a 1% sample, and links together education records for those educated in England with HMRC data on annual earnings. This would allow for very detailed controls for education, as well as age, ethnicity, etc., and may in future allow for controlling by industry and occupation. However, it does not include a measure of hours worked, and does not cover older workers.
- Real time information from HMRC is based on much larger sample sizes than the ASHE. While this would not be appropriate to use for the main regression model, as it would not allow for controls, we would recommend checking average wages in local areas against what is found in the ASHE sample as a sense-check of the representativeness of the ASHE data by LA area.

It is reasonable to leave out 2020 and 2021 given the impact of the COVID-19 pandemic on working patterns and, for instance, the furlough scheme. MHCLG will need to consider whether to continue to use three years of data as additional later years become available, or whether to retain more years of data. Dropping 2022 data once 2025 data are available would help to keep estimates up to date if we had reason to think the underlying area fixed effects may be changing over time. However, there is evidence that geographical disparities in wages are highly persistent over much longer time periods than four years (e.g. 1997–2007 to 2012–2019; see [Overman and Xu](#)) so that in practice, small sample sizes may be a greater concern, making it preferable to use more years of data in the future.

Sample sizes will be an important consideration in determining both how many years of data to use, and whether to estimate LCAs for lower-tier areas or only larger upper-tier areas. **We recommend that MHCLG undertakes additional analysis to check sample sizes in the ASHE dataset.** This could include examining the volatility of estimates over time, if estimated on different sets of three years.

Recommendations: labour cost adjustment

Short term

Use log hourly earnings as the dependent variable in the LCA regression, drop the control for hours worked, but retain the control for full-time/part-time status of job.

Test the robustness of estimates to winsorising earnings (i.e. dropping the top X percentiles of earnings nationally before estimating the model), and to dropping the control for whether the individual is working in the private sector as opposed to the public sector.

Consider using potential experience instead of age in the regression model.

Include interaction terms between age, or potential experience, and a dummy for 'high-skilled' occupations or industries.

Cluster standard errors at the individual level, and include year dummies in the regression, to recognise that the ASHE data are a short, wide panel dataset.

Medium term

Investigate whether sample sizes and the controls for occupation–industry mix are sufficient to estimate LCAs for lower-tier areas.

Consider how LCAs relate to London weighting, and to national pay bargaining for in-sourced services.

Consider examining the earnings of LA and commissioned services workers, to better understand the most appropriate part of the wage distribution to base LCAs on.

Longer term

Consider whether there is a data-driven way to focus on those occupation–industry groups that are most relevant for LAs' labour costs.

Consider undertaking complementary analysis using the suggested alternative datasets.

Property cost adjustment

The broad conceptual approach

The property cost adjustment – which MHCLG refers to as the rates cost adjustment – is intended to reflect differences in costs that LAs face as a result of differences in rents or business rates bills for the premises they use to deliver services. MHCLG proposes to estimate a regression of property characteristics on a set of controls for property characteristics, and a dummy variable for each LA. MHCLG then proposes to use the estimated coefficient on the LA dummy (i.e. the area fixed effect) directly as the LA-level cost index. This aims to estimate the variation in the going rate for similar properties, accounting for the effects of observed property characteristics.

This analysis uses a detailed database from the Valuations Office Agency (VOA) on properties' rateable values – estimates of how much it would cost to rent each property for a year. This is likely to be more comprehensive and up to date than other potential sources of data on commercial property costs, and is an appropriate source of data to use for this purpose. It has the advantage that property values are assessed on a consistent basis across England, and are updated frequently, with periodic revaluations of existing properties. This will allow RCAs to be re-estimated periodically in future years.

This proposal makes several key changes to the ACA methodology used in 2013–14. The removal of arbitrary lower limits is a clear improvement. The change to using more granular data from the VOA – allowing for controls for property characteristics – is also welcome.

To note, a bespoke cost adjustment is applied to the temporary accommodation formula to reflect mean rents in the private rented sector. This is likely to be more appropriate than using the RCA values, which capture differences in commercial rather than residential property costs. We do not consider the details of that bespoke adjustment in this report.

Regression specifications and control variables

MHCLG proposes to estimate the following regression equation:

$$\ln\left(\frac{\text{rateable value} - \text{plant and machinery value}}{\text{total area}}\right) = \alpha + \beta_1 \frac{\text{line area}}{\text{total area}} + \beta_2 \frac{\text{other addition area}}{\text{total area}} + \beta_3 \frac{\text{car park area}}{\text{total area}} + \beta_4 \ln(\text{business density}) + \gamma_i \text{local authority}_i + \delta_j \text{property description}_j + \delta_k \text{line description}_k + \delta_l \text{other addition description}_l + \delta_m \text{adjustment description}_m + \varepsilon.$$

This appears to be broadly sensible. The independent variable is the price per square metre of a property, which is preferable to looking at prices per property. Expressing this in logs is also sensible as we typically think property characteristics (such as whether they are retail or office spaces) will affect the price per square metre proportionately (by a given percentage per square metre) rather than by the same pounds per square metre.

Including some such controls for property characteristics is clearly sensible in order to be comparing rents between properties that are otherwise similar. It is difficult to assess the appropriateness of these particular controls based on the limited descriptions provided. We would caution that if the shares of area included as controls sum to 1 (if line area + other addition area + car park area = total area), then including all three shares will lead to perfect collinearity (one share can be expressed as a linear relationship of the others). **If this is the case, we would recommend removing one of the three shares.**

We are also concerned that the model may now be over-controlling for some things that do vary between LAs in ways that will affect their costs. We have particular concerns about the inclusion of an additional control for business density. Specifically, MHCLG proposes to estimate business density within an LSOA (the number of business registrations divided by the total area of that LSOA) to proxy for 'central business districts' where land and property values are likely to be exceptionally high. MHCLG proposes to include this LSOA-level measure of business density as a control in the property-level regression.

On the precise measure of business density used, data from the 2019 business census are likely to be appropriate as we would expect the spread of businesses and the location of central business districts to be fairly stable over time. We agree that it would be preferable to update this as more up-to-date data become available. We do not have a strong view on whether it is appropriate to use a logged measure, especially if this makes little difference to the results.

While, in our view, including some control for business density would be preferable to having no control, we are less convinced that including a control for business density in the way proposed is an improvement. This is a matter of judgement.

The justification for wanting to exclude central business districts is that, otherwise, some specific high-value postcodes within a wider LA area (e.g. Canary Wharf in Tower Hamlets) would mean overestimating the property costs facing Tower Hamlets council, given that it may still have a choice of reasonably priced properties outside of Canary Wharf. However, it may be that some key council facilities must be located in highly accessible locations in order for services to be delivered effectively, and these may be in dense areas with relatively high rents.

Further, including business density for every LSOA means that the regression effectively controls for the *average* business density in an area, and removes this from the area fixed effect. This may be over-controlling if there are areas that have relatively high business density throughout, because, if this is associated with higher property values, this will be removed from their area fixed effect.

We recommend investigating other approaches to accounting for areas where the presence of central business districts may distort measures of average property values. One approach would be to experiment with setting some threshold of business density (e.g. the top X percentile nationally amongst those with non-domestic properties) and either including a dummy variable for these very-dense areas, or dropping them from the regression. To provide additional reassurance if large differences remain between neighbouring LAs, MHCLG could consider checking whether rates for the kinds of properties that councils might use are indeed much higher in particular LAs than in neighbouring areas.

Recommendations: property cost adjustment

Short term

If necessary, remove one of the three shares from the RCA regression, if having three shares introduces a problem of perfect collinearity.

Medium term

Investigate other approaches to accounting for areas where the presence of central business districts may distort measures of average property values.

Accessibility

The broad conceptual approach

The accessibility component of the ACA is intended to account for the impact of differences in travel time on the employee time needed to deliver services, and hence on labour productivity. It is composed of two different factors: dispersal, which reflects journey times from a central hub to households (e.g. for child protection visits); and traversal, which reflects journeys between households (e.g. for waste collection). Both of these would be applied as an adjustment to councils' estimated labour costs. MHCLG is also considering a separate 'remoteness' factor, which would be intended to capture the indirect costs associated with lack of access to a major market.

In each case, the appropriateness of these adjustments depends on whether they capture unavoidable differences in the costs councils face in delivering services. This needs to be rooted in an understanding of how LAs deliver services in practice. For instance, how often do staff delivering a particular service travel from hubs to residential areas (dispersal), as opposed to cycling between residential areas (traversal)?

The 'journey times data' used reflect the road network, traffic speeds and public transport timetables. This may be reasonable, and is likely to be preferable to using straight-line distances, or relying on population density or sparsity as proxies, given differences in the quality of transport networks across the country. However:

- We have little information as to the source of these data, and so have not been able to reach a view on their reliability.
- It may also be that some forms of transport may be more or less appropriate for particular types of council worker. For instance, while some care workers in London may be able to travel between clients using public transport, journey times for waste collection will reflect the road network and traffic speeds but would not be directly affected by the quality of local public transport.
- It is also not clear how ‘average minimum journey times’ have been computed; although, if journey times vary significantly over different days and times, the average used would ideally reflect the typical days and times at which councils deliver services (to the extent that these are not reasonably within councils’ control).

Measuring population dispersal

The dispersal factor reflects the average minimum journey time from an LSOA to the centre of an Area of Town Centre Activity (ATCA) in the nearest settlement of over 10,000 people; where an ATCA is not defined, an ‘important place’ (e.g. a school or a large shop) from that settlement is used instead. MHCLG proposes to generate a population-weighted average measure of dispersal at the LA level across all LSOAs in each LA. Population-weighting takes account of the substantial differences in populations of different LSOAs.

It is not clear whether the nearest ATCA used for the calculation should be restricted to being within the same LA. Making this restriction would apply a similar logic to that used for the traversal factor (discussed below). This may make a difference for areas where a large proportion of their population’s most natural, nearest town centre would be in a neighbouring LA. Again, where such a restriction would be appropriate depends on how councils deliver services in practice in such areas, and this may differ across service. For instance, residents may be unlikely to have children’s services visits from outside their LA area, but this may be more common for adult social care (which is more likely to be outsourced, with providers working across LA boundaries). **We recommend that MHCLG tests the robustness of estimated dispersal factors to imposing the restriction that journeys must be within-LA.**

We agree that it is reasonable to make a bespoke adjustment for the City of London given its small population. However, this may suggest that the ‘hub town’ method may generally work less well in built-up areas.

Measuring traversal times

The traversal factor aims to measure journey times between households. We understand the proposed measure to be an estimate of the average journey time from an LSOA to the nearest set of other LSOAs (destination LSOAs) such that the cumulative population of that set sums to 10,000. The average for each origin LSOA is the average across the relevant destination LSOAs, weighted by the destination LSOA populations. The average for each LA is taken across origin LSOAs, weighted by the origin LSOA populations.

This approach is reasonable. **However, when calculating the average for a given origin LSOA, we recommend that the journey time to the furthest-away of the set of destination LSOAs should be given a lower weight than its full population.** It should instead be given a weight of 10,000 less the cumulative population of the set of destination LSOAs excluding itself. This will avoid over-weighting the longest journey time.

The documentation provided suggests that the City of London has higher traversal values as it has a smaller number of LSOAs. This suggests that the set of destination LAs is restricted to having to be within the same LA as the origin LSOA. A similar issue would be found for other areas where many of the next-nearest LSOAs would be in a different LA. However, it is not clear that this is mis-measurement, even in the case of the City of London. If services are only provided within LA boundaries, then such a restriction would be appropriate. It would not make sense to start reflecting journey times from the City of London to areas outside the City of London as this would defeat the objective, which is to reflect differences in the costs of delivering LA services as a result of an area's economic and administrative geography. **We suggest that consideration is given to how services are delivered, and whether journeys may span LA boundaries or not.**

Accounting for the impacts of remoteness

A new adjustment for remoteness is being considered in order to reflect the indirect costs of increased journey times to markets, which might mean reduced competition (if fewer providers can operate) and reduced economies of scale. We were asked to consider the approach taken to capturing remoteness, and not for our judgement as to whether such a factor should be included.

MHCLG proposes to use the minimum journey time from each LSOA to the nearest ATCA in a major town or city (with more than 75,000 residents). This

would be something of a hybrid with elements of both the traversal and dispersal factors.

We recommend that MHCLG considers several alternative measures of ‘remoteness’ and how robust the adjustment is to these alternatives. The threshold of 75,000 residents is essentially arbitrary, and sensitivity to different thresholds should be tested. Furthermore, if the remoteness factor is meant to capture access to supplier markets and the impact this has on competition and prices for supplies and commissioned services, then it may be worth measuring travel times to the two or three nearest (rather than the very nearest) ‘large settlement’; competition is likely to be greater if there are more towns nearby than if there is just one large town.

More generally, the evidence base for how remoteness actually affects supplier access and costs, and particularly how it does so above and beyond journey times, which are already captured in the dispersal and traversal factors, is limited. **We recommend that more evidence is sought on the nature of additional costs councils face in relation to remoteness, to better understand whether the proposed measure is likely to proxy for these, and how to weight this factor.**

Recommendations: accessibility and remoteness

Short term

In calculating the traversal factor, down-weight the journey time to the furthest-away of the set of destination LSOAs in estimating the average journey time from each origin LSOA.

Test the sensitivity to and use of alternative measures of remoteness, including the population threshold and journey times to a small set (rather than one) ‘large’ settlement.

Medium term

Consider further the delivery model of different services, including whether public transport, and journeys that cross LA boundaries, are appropriate for inclusion in the measures of dispersal and traversal.

Seek more evidence on the nature of additional costs that councils face in relation to remoteness, to better understand whether the proposed measure is likely to proxy for these, and how to weight this factor.

ACA weights

MHCLG proposes to weight together the various components of the ACA (for the LCA, RCA, accessibility and, potentially, remoteness adjustments) into a single index for each spending needs formula. This means each LA area will have formula-specific adjustments made for its relevant costs.

The broad approach to this weighting – for instance, using data from revenue outturn and subjective analysis returns to estimate the national average share of running costs, which, for each service, vary with labour or rates costs – seems reasonable. It is likely to be the best that can be done without much more detailed data from a wider set of LAs on how services are actually delivered.

However, we recommend that MHCLG checks whether those LAs sampled and used in the Subjective Analysis Return (SAR) are representative of average labour and rental costs. How councils have historically opted to deliver services, and the costs of their different inputs, and so in turn the split in their spending between employee and running costs, will depend on the relative labour and rates costs they face. It would be a concern if those LAs reflected in the SAR typically had above- or below-average LCAs or RCAs.

We do not have a strong view on whether it is appropriate to assume that for some categories (such as contracted services), 70% of costs represent employee costs, and 30% running costs. This is likely to vary by category. We note that the source cited is now nearly 30 years old, and the nature of, for example, outsourced services is likely to have changed over this period. We are not aware of more recent evidence that MHCLG could use, although more may be forthcoming in consultation responses.

MHCLG proposes to base the default accessibility weight on an estimate of the time LA workers spend travelling as a proportion of their total hours of work. This would use an estimate of the average hours per year spent travelling for work amongst all LA employees as a share of average hours per year spent working amongst all LA employees from the National Travel Survey (NTS). In theory, this should capture something about the share of a council's labour costs that may be attributable to travel (as opposed to time spent on service delivery).

However, it matters crucially what 'travelling for work' means in this context. The NTS is based on survey respondents completing travel diaries, and it is unclear how much of this will reflect service-user-focused travel, such as travel for children's social-care visits, or instead more 'corporate' travel (e.g. to management meetings or professional conferences) where the traversal and dispersal measures estimated may be less relevant. The very low time proportion cited (1.5%, or approximately 30 minutes per week for a full-time worker) may not be representative of the proportion of their working hours that some categories of council worker – such as social workers, or health and safety inspectors – actually spend travelling between sites as part of their day-to-day work. **We recommend that this assumption is tested further with councils, who will have a better understanding of how services are delivered in practice.**

For services such as adult social care or waste collection, we might expect considerably more time to be spent 'travelling' between houses, making an adjustment for traversal particularly important. It is welcome that alternative sources have been used for weights for adult social care and waste collection, although the illustrative ACA weighting still appears to be very low.

On some of the specific weightings suggested:

- The weights on the RCAs for adult and children's social care appear to be particularly low. We would encourage MHCLG to consider whether this appears reasonable, given that a large share of input costs for care homes is likely to reflect property costs,
- We are not convinced that some elements (such as grounds maintenance, cleaning and domestic supplies) are rent-related; or that a remoteness adjustment is relevant for 'Equipment, Furniture & Materials' or 'Car allowances for travelling expenses' (where traversal and dispersal may be more relevant).

- We are not convinced of the rationale for including a cost adjustment for insurance. There may be an argument for including an accessibility adjustment for travel insurance, where the costs of insurance may reflect the share of time spent travelling, but councils will not typically be restricted to purchasing from a local insurance broker when purchasing general insurance.

Recommendations: ACA weights

Short term

Check that the LAs sampled and used in the SAR have LCAs and RCAs that are representative of the distribution nationally.

Consider whether the type of travel captured in the NTS is of the kind for which dispersal and traversal adjustments were intended.

Test further with councils the proportion of working hours that LA employees spend travelling.

Further consider RCA weights for adults' and children's services, and application of accessibility or remoteness adjustments for certain expenditure types.

3. Review of the needs and resources assessments

The ACAs are part of a wider finance system that also attempts to account for the demand for different services faced by different councils, and the revenues they can raise themselves via council tax to help fund their services. We now provide an assessment of the reasonableness of proposals for: the assessment of revenue-raising capacity; assessments of demand for non-social-care services; and the system that brings together costs (i.e. the ACAs), demand and revenue-raising capacity and allocates funding accordingly between councils.

Overall assessment

Our overall assessment is that, taken together, the proposed approaches for resource adjustment, assessing non-social-care services, and the overall ‘finance model’ are reasonable. However, the government should be upfront about the subjective judgements that underlie its choices, and the trade-offs they entail. And there is scope for improvements in both the approaches and how they are communicated to stakeholders.

Council tax resource adjustment

The use of a common notional tax rate as opposed to councils’ actual tax rates when assessing council tax revenue-raising capacity is welcome – this avoids incentivising councils to set low tax rates in order to reduce their assessed revenue-raising capacity and boost their grant funding.

In a similar way, using notional as opposed to actual discretionary discounts and premiums is welcome – to avoid distorting decision on the use of these powers. Assuming no use of these powers, as MHCLG proposes, is one reasonable approach. However, in the longer term, if these powers are utilised heavily, consideration should be given to using non-zero notional discretionary premiums and discounts (e.g. based on the average premium and discount levels across the country).

Using existing average council tax rates of different council types to split the notional rate between tiers of local government ('tier shares') is reasonable.

Regression-based approaches to account for the impact of both working-age council tax support (CTS) schemes and non-collection is reasonable, as is using measures of deprivation in these regressions. However:

- Consideration should be given as to whether the headline index of multiple deprivation (IMD) measure is most appropriate or whether a subset of indicators (e.g. related more specifically to income deprivation) would be more appropriate.
- Consideration should be given to controlling for characteristics of councils' CTS schemes, as evidence suggests these may vary systematically due to the way funding was initially allocated when CTS was localised.

Non-social-care needs assessments

MHCLG's approach to determining which services should be subject to specific needs assessments – based on evidence of specific demand-drivers, and of sufficient scale to matter to overall funding allocations – is reasonable. However, it should be clear that the 'scale' criteria apply at the council level: a service that is important for some councils, but not important for the sector as a whole, can still be considered.

For services other than social-care services, MHCLG proposes to use council-level regression analysis to determine the weights to apply to the local characteristics (such as deprivation) included in the spending needs formulas. Such an approach is more likely to capture past variation in funding for councils, rather than their underlying spending needs. Implicitly, therefore, using data from a given set of years to estimate these formulas means assuming that funding was broadly aligned with need in that year. MHCLG should explicitly recognise this issue in communication with stakeholders, and justify why it has chosen the years it has for inclusion in the regression analysis. In the short term, it would be reasonable to use judgement to adjust the weights applied to different local characteristics, if justification is provided. In the longer term, the collection and analysis of subcouncil-level data would be beneficial, with a focus on larger services such as waste collection and disposal, street cleaning, home-to-school transport, etc.

We have concerns about the calculation of 'client group' populations who are assumed to need different services.

As it currently stands, the Foundation Formula (the formula for services without their own service-specific spending needs formula) sums up resident population, gross commuter inflows and average daily gross visitor inflows to calculate its

client group population. This means that the demand for services covered by this formula is assumed to be the same for day visitors and commuters as it is for residents – which is not a reasonable assumption. MHCLG should instead either: include commuter flows and visitors as characteristics in the regression analysis used to construct the Foundation Formula; or use judgement-based weights instead, providing a justification for the chosen weights.

We are not persuaded conceptually by the use of gross, as opposed to net, commuter inflows. If, as we recommend, commuter and visitor flows are weighted separately from resident populations, we would still recommend moving to net commuter flows.

In the short term, we would also suggest using Census 2011 commuter inflow data as opposed to 2021 data due to the effects of the COVID-19 pandemic in March 2021. In the longer term, we would recommend adjusting 2021 data using mobile phone location data (which can be used to proxy people's location of residence and work).

The overall model and cross-cutting issues

The overall design of the 'macro model' is reasonable and a substantial improvement on the last system in place (the 'four block' model of the late 2000s and early 2010s). However:

- The choice of notional council tax level will be important for both councils' funding and incentives for housing development, and should be explicitly justified.
- In our view, consideration should be given to giving councils whose actual tax rates are substantially below the assumed notional rate greater flexibility to increase council tax rates in the coming years, in order to avoid sharp reductions in funding.

It is reasonable to use existing spending shares for different services to determine each spending needs formula's weight (termed it's 'control total') in the overall needs assessment.

The effects of the new system after year 1 will depend on how key elements (such as 'control totals', populations, notional tax rates) are projected forward, and on plans for more significant resets. The government should clearly explain the trade-offs involved in these decisions and justify its preferred course of action. For example, if social-care spending is expected to continue to increase as a share of overall council spending over time, it would be reasonable for its control total to increase between resets.

In several places, consideration should be given to how the approach can be made more future-proof. For instance, MHCLG will need to carefully consider how to calculate ‘tier shares’ (for both council tax and spending needs) as the number of two-tier areas reduces (the issue only becomes moot if/when all two-tier areas become unitary). It may also want to consider how new deprivation measures will be incorporated.

More consideration should be given to the weights applied to different observations in the various regression analyses conducted – there are some inconsistencies currently (e.g. whether councils with larger populations receive a larger weight).

The council tax resource adjustment

The council tax resource adjustment is intended to recognise that there are differences in councils’ abilities to raise revenues through council tax bills on residential property. MHCLG proposes to estimate a measure of council tax revenues that reflects councils’ tax bases, and the extent to which their revenues would differ *even if* they were to set the same bills for equivalent properties and offered the same reliefs and discounts.

This general principle – equalisation on the basis of *notional* revenues – is preferable to equalisation on the basis of councils’ *actual* council tax revenues for several reasons, as follows.

- Equalisation on the basis of actual revenues would give councils an incentive to set lower tax rates or grant more discretionary discounts – or offer more generous local council tax support (LCTS) – than they otherwise would, as they could expect their grant and top-up funding to rise (or tariff payments to fall) to compensate for the lower tax revenues. This would potentially undermine council tax as a source of revenue.
- Equalisation on the basis of actual revenues would also reduce the discretion and financial accountability of councils. Part of the revenues that would arise from any increase in local tax rates (or reduction in discretionary discounts) would effectively be siphoned off through equalisation, and, similarly, councils would not bear the full cost of setting lower tax rates. There would thus be less scope for councils to vary the balance struck between taxation and spending according to local preferences.

In this section, we review the proposed adjustment to the measured council tax base in each area, focusing in turn on discounts and exemptions, LCTS, collection rates and tier splits.

Discounts and exemptions

MHCLG proposes to account for the impact of mandatory exemptions and discounts, and to apply relevant band ratios to convert the tax base to Band D equivalents. As councils have no discretion over the application and cost of these discounts, and there are good data on costs in each area, this is sensible.

There are also some amounts and premiums over which LAs do have discretion. For instance, councils can decide whether to charge the empty homes or second homes premium (or both) in their areas, and at what rate, up to a statutory maximum. MHCLG proposes not to reflect the impact of discretionary discounts and premiums applied by LAs. We agree that it would not be appropriate to adjust notional revenues for *actual* discretionary discounts/premiums, as this would reward areas offering more generous discounts with additional funding. Making no adjustment implicitly assumes there is no use of these discretionary powers, and this is one reasonable approach.

However, it is likely that the yield (or cost) of potential discretionary premiums (or discounts) differs around the country in ways that are outside the control of LAs. If these premiums (discounts) have been set to reflect the cost (savings) of LAs in relation to dealing with, for instance, second home owners or empty homes, then it may be appropriate to ignore them: for example, if they reflect variations in cost of service provision, or correct for the negative externalities associated with particular types of residential property use. However, if we believe differences in yield reflect real differences in councils' revenue-raising capacity, it would be appropriate to consider using non-zero notional discretionary premiums and discounts. These could be based, for example, on estimates of each LA's yield (costs) from a scheme that reflected the average premium (discount) levels across the country. This may be particularly important in the longer run if councils' powers are utilised heavily, and the yields (costs) are significant in scale. **In the longer term, we suggest giving consideration to the use of assumed (rather than zero) discretionary discounts and premiums, particularly if their use becomes more significant.**

Local council tax support

Adjusting for pensioner LCTS is fairly straightforward because the details of schemes are still determined nationally, such that the costs are outside of LA control. This means that, as for other mandatory discounts, it is appropriate to use actual amounts from council tax data, as MHCLG proposes to do.

Adjusting for working-age LCTS is more complicated because local schemes differ in their generosity. It is important to account for variation in employment and incomes across areas that mean that the costs of an ‘equivalent’ working-age LCTS scheme would vary. Failing to account for this would require those in areas with above-average need for CTS to bear the above-average cost of providing that support – either through higher levels of council tax, less generous support schemes, less to spend on other services, or a combination of all three.

While the actual costs of each council’s scheme are known, there are no up-to-date data available on the relative costs of applying a common set of tax rules in each area. Data from when a common CTS scheme was still in place across England are no longer likely to be good proxies for the relative costs of a ‘typical’ scheme across areas in 2026–27. Schemes have typically become less generous since 2012–13, in particular through the introduction of minimum payments, and there are likely to have been changes in the profile of taxpayers in different areas.

The first-best option would be to estimate the costs of applying some ‘model’ scheme in each LA. This could reflect a ‘typical’ scheme, or could match whatever government thought was an ‘ideal’ scheme. However, this would require good data on the circumstances of council taxpayers in different areas. This would need to go beyond the data that councils already hold on recipients of their current CTS schemes, as these would omit households who are not eligible for their council’s actual scheme but who would be eligible for the notional scheme. Collecting appropriate data would likely involve a costly data collection exercise. This is something MHCLG could come back to in the long run.

Instead, MHCLG proposes to use a statistical proxy, based on analysis of the relationships observed between local area characteristics and actual working-age CTS costs. It proposes to regress each area’s current spending on working-age LCTS on characteristics (a measure of deprivation, and a proxy for the

importance of working-age households to the council tax base) and to use these average relationships to estimate the working-age CTS as a share of the tax base in each area if it was *only these characteristics* that drove differences in schemes' costs. Such a regression-based approach is reasonable.

These estimated shares will then be applied to the actual England total of working-age CTS Band D equivalents to calculate each LA's modelled share of the total. The proposal to adjust aggregate notional council tax resources in line with the total actual cost of working-age LCTS implicitly assumes that the current national average generosity of LCTS schemes is the 'right' level. This is a political judgement.

More specifically, MHCLG proposes to estimate the following:

$$\frac{\text{Working-age LCTS tax base (dwellings)}_i}{\text{Total tax base (dwellings)}_i} = \beta_0 + \beta_1 \text{IMD2019 avg score}_i + \beta_2 \frac{\text{Pop aged 18-64}_i}{\text{Pop}_i}.$$

The measure of deprivation used would ideally proxy for the prevalence of low incomes amongst working-age people, as it is this which would likely drive local eligibility for a notional LCTS scheme and hence the cost of such a scheme per working-age household. IMD2019 average score is only one measure of relative area deprivation, and has the advantage of being widely understood and used. However, overall IMD scores reflect patterns of income deprivation affecting children and pensioners, as well as other dimensions of area-level disadvantage, such as crime rates. (See 3.Box 1 for further discussion of IMD2019.) **We recommend that MHCLG considers whether other proxies for deprivation amongst working-age households may be more appropriate.** This could include:

- the income and/or employment subdomains of IMD2019;
- measures that more closely relate to the characteristics councils actually use in their schemes, such as local caseloads for specific working-age benefits.

Box 1. General points on IMD2019 average score

In several places in assessments of need and resources, MHCLG proposes to use each area's average score from the English Indices of Deprivation 2019 (IMD2019), which is one measure of the relative deprivation of different

areas. It proposes to use this in two main ways: to estimate the relationship between relative deprivation and historic outcomes (e.g. collection rates, spending on services); and as a proxy for areas' current socio-economic characteristics in setting future funding allocations.

IMD2019 average score has the advantage of being widely used and familiar to stakeholders, and can be calculated for new LAs as boundaries change (as average score is a summary measure across LSOAs). However, several features of this measure are worth noting.

- The most recent release (IMD2019) is now based on fairly out-of-date data. For instance, data for the income and employment domains relate to the 2015–16 tax year, and some of the skills measures are based on data from the 2011 Census.
- Overall IMD scores reflect patterns across seven different domains: income; employment; education, skills and training; health and disability; crime; barriers to housing and services; and the living environment. In any given case, there may be particular subdomains that are more appropriate than the overall summary measure.
- Average score – a population-weighted average of scores across all LSOAs in an area – is only one of the summary measures of deprivation. Alternative measures (such as 'proportion' and 'extent') would give relatively more weight to small areas of more extreme deprivation. Even if average score is the best-known metric, there is a judgement involved in selecting this over other measures.
- An [updated index](#) (IMD2025) is due to be published in October or November 2025, and is likely to show that patterns of relative deprivation have changed. There may also have been changes in the underlying metrics used (e.g. as the working-age benefit system has changed), so it is unclear how comparable this will be to IMD2019 and whether it would be appropriate to substitute the new measure into a relationship estimated based on the old measure.

It may not be possible to reflect an updated measure of deprivation when setting funding allocations for 2026–27, although continuing to use an out-of-date measure in future years may conflict with the 'dynamism' principle. **We recommend that MHCLG considers carefully and communicates to stakeholders how it will reflect up-to-date measures of deprivation in future funding allocations.**

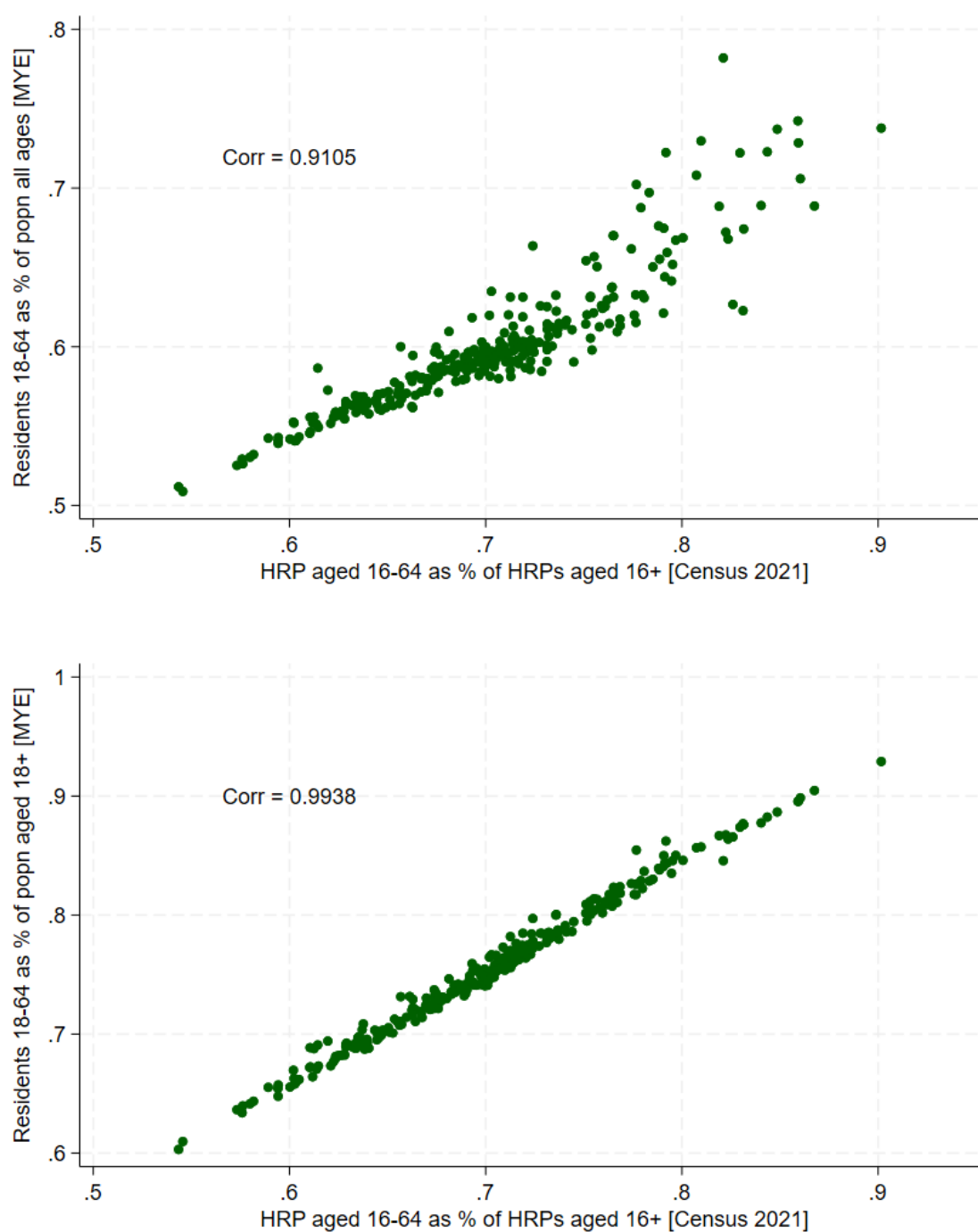
The second proposed control variable – the working-age population as a share of the total population – is a proxy for the importance of working-age households to the council tax base. However, this will be affected by the share of young people in an area, which factors into the denominator. It would be preferable to use a household-based measure, capturing the proportion of *households* in an area that might be eligible for working-age (instead of pensioner) CTS based on their household composition, if their income was sufficiently low.

One option would be to use a household-based measure that can be straightforwardly computed from Census 2021 results: specifically, the proportion of Household Reference Persons (HRPs) who are aged 16–64, as a proportion of HRPs who are aged 16+. This is likely to be the closest measure available in current official statistics. An alternative, available from the Office for National Statistics (ONS) mid-year population estimates, would be to use the proportion of residents aged 18–64 as a proportion of those aged 18+ (instead of all ages). In practice, these two alternative measures are highly correlated (see Figure 2), but the latter would have several advantages: it is available for each year; the ONS produces subnational population projections; and it would be trivial to substitute this into MHCLG’s existing modelling. **We recommend that the population aged 18–64 as a share of the population aged 18+ (rather than of all ages) is used as a control variable in the working-age CTS regression.**

When CTS was localised, all areas faced the same overall proportional cut in LCTS funding (10%) but they were obliged to maintain the generosity of pensioner CTS. Previous IFS analysis has found that as a result, those for whom pensioners were a bigger share of their overall caseload cut back the generosity of working-age LCTS by more ([Adam, Joyce and Pope, 2019](#)). This means that CTS schemes may differ systematically between areas with high and low shares of working-age recipients. Failing to control for differences in the schemes’ designs in the regression may therefore give biased results. **In the medium term, we suggest that MHCLG considers controlling for characteristics of councils’ CTS schemes.** For example, this could include a dummy for whether councils have minimum payments, or for their taper rates.

IFS has historically been able to access databases of CTS scheme details from the [New Policy Institute](#) and [entitledto](#), and [Policy in Practice](#) has also modelled the various localised CTR schemes in place across areas in recent years ([Bahia and Walker, from Policy in Practice, 2025](#)). MHCLG could seek to use these or similar data for further exploratory analysis.

Figure 2. Residents aged 18–64 as a percentage of population of all ages or population aged 18+, compared to share of HRPs aged 16–64



Note: Residents aged 18–64, aged 18+ and all ages are from ONS mid-year population estimates (MYEs) for 2021 from [Nomis](#). Household Reference Persons (HRPs) by age are from Census 2021, calculated from [dataset RM057](#). Each marker corresponds to a lower-tier or unitary authority in England.

One relatively common feature of working-age LCTS schemes is restricting support to properties in Band D or below. **In the short term, we recommend that MHCLG tests the sensitivity of its results to including an additional control for the proportions of the tax base in each area that are in council tax Band E or above.** This should be fairly straightforward to implement.

Collection rates

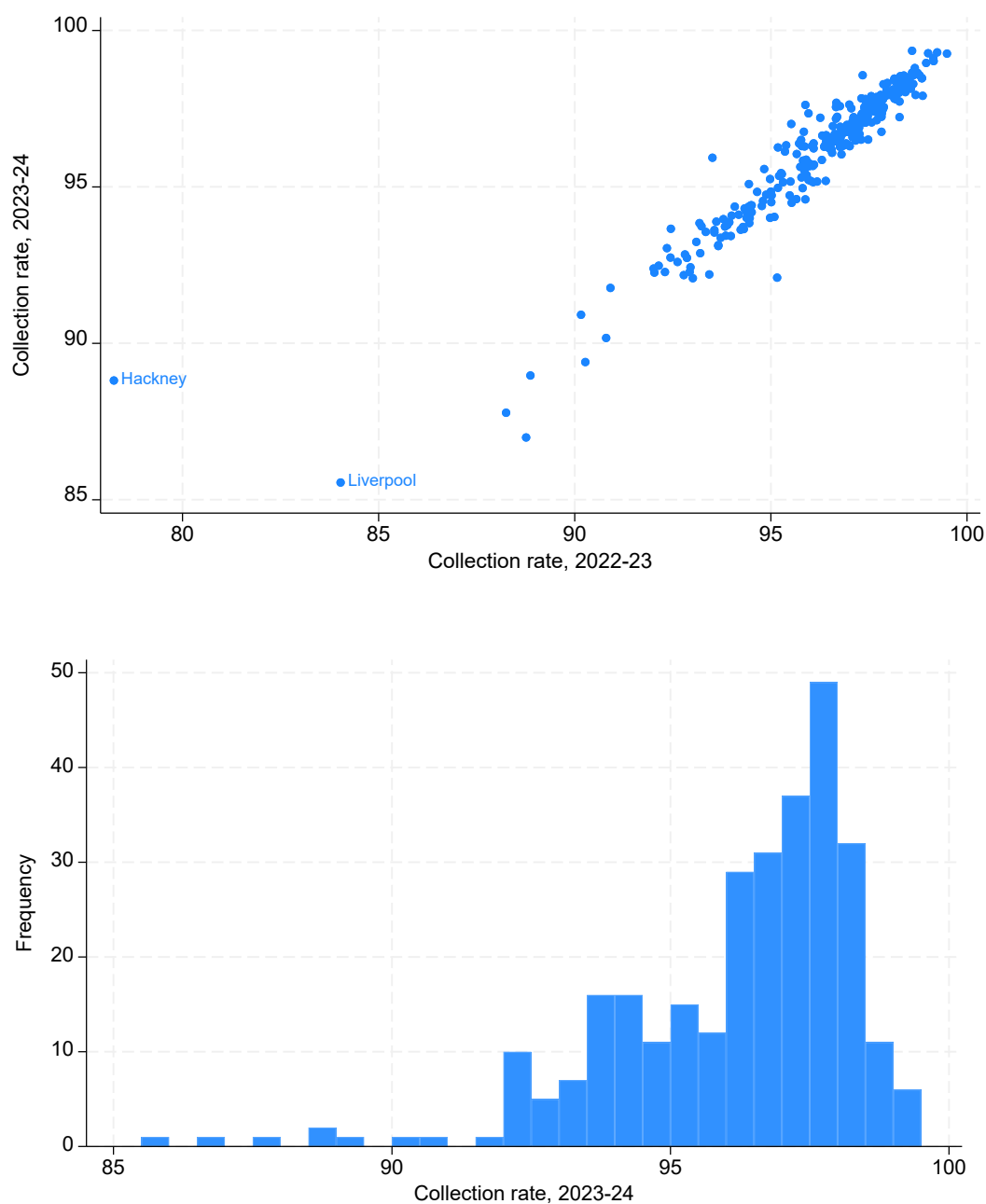
While we understand that MHCLG is minded not to adjust notional revenues to account for non-collection, this remains a topic of the ongoing consultation (Question 15). In this section, we consider the technical details of any potential adjustment, reflecting a potential approach described in the materials provided to IFS for this review.

Non-collection means that councils collectively raise less council tax revenues than they would otherwise, and so making some adjustment for non-collection will produce a better measure of aggregate council tax revenues. We agree with MHCLG's decision not to base any adjustment on each council's *actual* non-collection rate. This would create perverse incentives, disincentivising councils from trying to collect council tax as they would be compensated for non-collection, and presumably their residents would quite like not being chased to pay their bills. Like compensating councils for discretionary reliefs, this could undermine council tax as a source of revenues.

There are then two reasonable approaches which MHCLG could take to prediction. One option is to assume a common non-collection rate for all councils for this prediction. This would account for 'average' non-collection, and would avoid perverse incentives around council tax collection, as areas that increase their collection rates would still retain these higher revenues. However, this could be problematic if there are factors which affect councils' collection rates that are outside of their control. For instance, the populations in some areas could have characteristics that make it more difficult to collect council tax for a given level of resource or effort on the part of authorities. A common rate would fail to recognise these unavoidable differences.

Another option would be to use predicted collection rates for different councils, based on statistical analysis of the factors driving differences in non-collection rates (such as deprivation, mobility and age of population, housing tenure status, etc.). This would preserve councils' incentives to collect as much of their council tax revenues as they can, while taking account of their different circumstances.

Figure 3. Council tax collection rates by billing authority in 2022–23 and 2023–24, and distribution of collection rates in 2023–24



Note: Amount collected by 31 March each year as a percentage of the amount collectible for BAs in England.

Source: [Collection rates for Council Tax and non-domestic rates in England, 2023 to 2024](#), Table 6.

As shown in Figure 3, there is a reasonable degree of variation in actual collection rates between areas in recent years. There is also a fairly high degree of persistence in collection rates from year to year, which suggests it would be

worthwhile to investigate the drivers of between-LA differences. But importantly, determining whether differences in collection rates are *correlated* with area characteristics is not sufficient to prove that any differences in collection rates are unavoidably the result of these factors, as opposed to the result of correlation between area characteristics and the stringency of LA collection policies. Whether to use a common rate or assume different rates for different councils is a matter of judgement. However, our view is that most of the differences likely do reflect factors outside LA control.

MHCLG has provided information on how it would propose to adjust for collection rates, *if* this option was pursued. It proposes to use a regression analysis, with a three-year average of collection rates (from 2022–23 to 2024–25) in each billing authority (BA) area as the dependent variable. More specifically, MHCLG proposes to estimate the following model:

$$\begin{aligned} \text{Avg collection rate}_i = & \beta_0 + \beta_1 \text{IMD2019 avg score}_i \\ & + \beta_2 \text{Propn HHs renting}_i + \beta_3 \text{Propn HHs leaving each year}_i. \end{aligned}$$

We agree with the decision taken to exclude Hackney from the regression, as a cyber-attack there has depressed collection rates. MHCLG also proposes to drop the new unitary authorities (Cumberland, North Yorkshire, Somerset, and Westmorland and Furness) from the estimation. While it is reassuring that the results are not sensitive to this decision, it may not be appropriate to repeat this kind of exclusion in future years, given that a greater share of authorities are likely to undergo reorganisation in the coming years.

We recommend that an alternative approach is taken to missing data in any collection rate regression. Such an approach could avoid dropping more information than is necessary (including all BAs in the years that they existed) and would be more ‘future-proof’ to changes as a result of LA reorganisation. The simplest way to include the new BAs in the regression would be to calculate three-year average collection rates for them – based, in years they didn’t exist, on the collection rates in the old BAs. A better alternative would be to include each annual rate as a separate observation, changing the level of analysis from BA to BA-by-year. Given that the proposed controls are not time-varying, the coefficients would still be estimated based on between-LA variation in collection rates, rather than within-LA variation over time. However, this approach would recognise that the actual structure of the underlying data is a short panel, so that, for example, standard errors would better capture the ability of the model to explain variation in collection rates.

The latter approach (estimating the model at the BA-by-year level) would also allow for the inclusion of year dummies in the model. This would make it possible to test empirically whether there was any overall trend in collection rates between 2022–23 and 2024–25. If there is a strong time trend in collection rates, this would make it more important to use up-to-date data, and to consider whether to assume any trend continued. It would also be possible to include interaction terms between the year dummies and any other controls. This would make it possible to test whether the relationships between the collection rate and the controls has been steady over time, and would give a sense of how robust results may be to being rolled forward a year. **In the medium run, we recommend exploring including year dummies and interaction terms.**

On the proposed control variables:

- **IMD2019 average score.** It is reasonable to include some measure of deprivation in the model, as this is likely to be predictive of economic hardship and difficulties paying bills, which may make collection more difficult. We do not have a strong sense of whether specific aspects or subdomains of deprivation are likely to be more related to the costs and difficulties of council tax collection. Local authorities may be able to suggest whether overall deprivation or other specific subdomains are likely to be most relevant.
- **Proportion of households leaving an area each year** (‘internal migration outflow’). This is available on an annual basis from ONS population estimates. Intuitively, this is acting as a proxy for the mobility of council taxpayers, which may drive the administrative costs of collection, for instance reissuing bills for parts of years and having to track down people who have moved out of an area to collect arrears. However, the proposed measure is only capturing across-LA moves away from an area. Local authorities may be able to advise on whether within-LA moves are also predictive of difficulties with collection.
- **Proportion of households renting.** This is taken from Census 2021, and so is not time-varying. We would expect this to correlate with mobility as renting households are also more mobile, on average, than owner-occupiers. It may provide additional explanatory power as it may capture within-LA mobility, and councils may find it more difficult to collect from those with shorter tenures. It is not clear from the documentation exactly which definition of renters is being used. Based on the English Housing Survey, private renters are much more mobile than social renters, who typically have longer tenures (see [Annex tables for English Housing Survey 2023 to 2024 headline](#)

findings on demographics and household resilience, Table AT3_6). **We recommend using the proportion renting privately, rather than all renters, or controlling for these two types of renting separately.**

In general, when choosing which controls to include, there will be a trade-off between a model's simplicity, and the extent of the variation between areas that is explained. As the proportion of households leaving an area and the proportion renting are both significant at the 10% level, we would be minded to include these. However, we have not been able to compare the regression results, when all three controls are included in MHCLG's proposed specification, to the results from a regression with only deprivation as a control. It would also be important to check not only how the overall performance of the model varied, but also whether estimates for individual authorities vary substantially between the two models.

The outcome variable in this model (the collection rate) is bounded above at 100%. **We recommend that MHCLG checks whether any areas are predicted to have a collection rate of more than 100%.** If this is the case, then we would recommend reconsidering the specification, as a linear probability model may not be appropriate. Other approaches (such as logistic regression) are able to handle outcomes that are bounded between 0 and 1, and may be better suited if there are outliers in the data.

More generally, both the proposed working-age CTS and collection rate regression models weight all observations equally. This places relatively less weight on the relationships observed in single-tier than in two-tier areas (where there are typically more BAs). A reasonable alternative would be to place relatively more weight on areas with higher council tax bases, if data from BAs with larger tax bases are more informative as to the relationships between area characteristics and collection rates. This would also mean that reorganisation would not affect the overall weight placed on a geographical area in the estimation, making the method more robust to local government reorganisation. **We recommend that MHCLG considers whether it would be appropriate to weight observations (e.g. by tax base or population) in regression analysis.** Further sensitivity checks on both the CTS and collection rate regressions would show whether results are sensitive to the choice of whether to equally weight observations, or weight them by tax base.

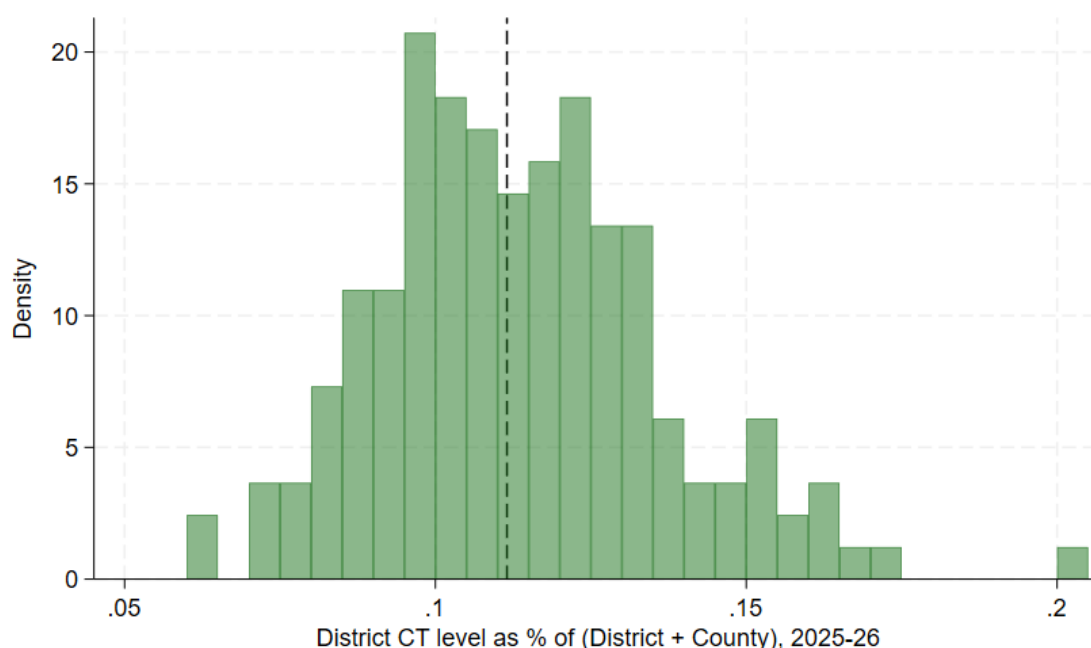
Tier splits

To generate funding allocations for specific LAs, it is necessary to apportion notional council tax revenues between billing and precepting authorities in each area. MHCLG proposes to apportion tax bases between billing and precepting authorities based on national average tier splits, derived from actual council tax Band D levels. Applying the split to the tax base allows for the notional council tax level to be expressed as one notional Band D council tax level, but is equivalent to specifying separate upper- and lower-tier council tax levels.

This is a reasonable approach, as basing funding allocations on the national average tier splits will minimise the extent to which the assumed tier split differs from actual practice in most areas. However, local tier splits may differ from this national average substantially, as shown in Figure 4. This will have implications for funding for individual councils, particularly if those receiving a lower actual tier split than the national average are not allowed to increase their portion of council tax bills. Council tax referendum principles currently apply separately to the different authorities in an area, and not to a household's overall council tax bill, although it is the latter that matters most directly for residents to be protected from 'excessive' increases in their bills. **In our view, MHCLG should consider whether more flexible council tax referendum limits would be appropriate in areas where the actual tier split between authorities is different from the national average.** We return to this point in a later section on the overall funding allocation model.

The information we have been provided does not discuss the plan for how these tier splits will be kept updated or evolve over time. If council tax referendum principles continue to differ by tier, then the actual national average tier splits are also likely to drift over time. **We recommend that MHCLG considers and communicates to stakeholders how these tier splits will be kept up to date.** To note, the national average split will also change over time as a result of local government reorganisation, which will change the composition of the group of two-tier areas over which any average is computed.

Figure 4. Distribution of share of council tax revenues collected by lower-tier councils in two-tier areas in 2025–26



Note: Council tax level set by a lower-tier council, as a share of the total level set by the upper- and lower-tier councils in the same area. Dashed line shows national average (11.1%).

Source: Based on data from '[Council Tax levels set by local authorities in England 2025 to 2026](#)'.

Recommendations: council tax resource adjustment

Short term

Include the population aged 18–64 as a share of the population aged 18+ (rather than of all ages) in estimating eligibility for working-age CTS.

Test the sensitivity of estimates to including the proportion of properties in Band E and above in a council area in the CTS regression.

If including an adjustment for non-collection: take a different approach to missing data in the estimation; include the proportion renting privately, rather than all renters (private and social); and check that no areas are predicted a collection rate of more than 100%.

Consider whether different measures of deprivation may better capture eligibility for working-age CTS, and check whether, for example, the income subdomain has more explanatory power than overall deprivation.

Medium term

If including an adjustment for non-collection: consider including year dummies and interaction terms, and CTS scheme characteristics, in any collection rate regression.

Consider whether it would be appropriate to weight observations differentially in regression analysis (e.g. by population or tax base).

Longer term

Consider using assumed (rather than zero) discretionary discounts and premiums, particularly if their use becomes more significant over time.

Consider – and communicate to stakeholders – how up-to-date measures of deprivation will be reflected in future funding allocations.

Consider how council tax tier splits will be kept up to date.

Non-social-care spending needs assessments

MHCLG proposes to have separate formulas for estimating councils' relative spending needs for different services, with one Foundation Formula covering a broad range of services and bespoke formulas for some services. The overall approach to determining which services should be subject to specific needs assessments – based on evidence of specific demand-drivers, and of sufficient scale to matter to overall funding allocations – is reasonable. However, it should be clear that the 'scale' criteria apply at the council level: a service that is important for some councils, but not important for the sector as a whole, can still be considered for a bespoke formula. The overarching approach for assessing spending needs also seems sensible, including separating out factors affecting demands for service provision and those driving the costs per unit of provision.

In this section, we discuss the fundamental limitations of an expenditure-based approach to estimating spending needs formulas. These are particularly relevant

for formulas estimated on council-level data. We then discuss MHCLG's proposed approach to the Foundation Formula. This is the only formula specifically in scope of this peer review, although some points may be more widely applicable to other formulas.

An expenditure-based approach

MHCLG argues that the need to spend on a service is our best available proxy for determining relative needs shares between LAs for services, given data constraints. However, it is important to recognise that actual spending as observed in data is not a measure of need to spend, which cannot itself be observed. There is no objective way to estimate 'needs' for different services (there are major identification issues that are difficult to overcome) and therefore any choice of formulas will be subjective.

Further, any formula derived from analysis of spending and service usage will be affected by the level of funding available at the time the data were collected. If overall funding levels were higher or lower, then patterns of spending and service use may be different. Indeed, patterns of spending across LAs will, to a large extent, be determined by the funding provided by government, particularly when councils' powers to raise their own revenues are constrained.

To see this, suppose, for example, that the government previously chose to allocate more funding to council areas with high levels of deprivation and high levels of ill-health. If the resulting pattern of spending across council areas was used to estimate a spending needs formula, this would show a positive relationship between deprivation and ill-health and spending levels. But this formula would largely reflect these past funding allocations and reveal little about the relative spending needs of different areas. Similar issues may arise when looking at service utilisation rather than spending – patterns of service usage may pick up where past funding has created the capacity to provide services, rather than the underlying need (and unmet need) for the services.

Making use of neighbourhood- and individual-level data for assessing needs for spending on social-care services is likely to result in substantially more robust spending needs formulas for these services. **In the longer term, MHCLG should consider collecting subcouncil-level data to allow for more robust spending needs formulas for non-social-care services.** This could focus on larger services such as waste collection and disposal, street cleaning, and home-to-school transport.

Given big changes in how funding was distributed across councils during the 2010s, the year chosen to estimate spending needs formulas could make a big difference to the resulting spending needs formulas and, in particular, to the weight placed on factors such as deprivation. Choosing a year after the big cuts to funding for councils in more-deprived areas in effect bakes in those cuts to future spending needs assessments. The proposal to estimate the relationship between deprivation and per-capita spending over the years 2021–22 to 2023–24, and then to replicate this pattern on average, implies that the government believes funding was broadly fairly distributed across LAs in those years. **We recommend that MHCLG is transparent with stakeholders about this issue, and justifies the choice of years for inclusion in the regression analysis.** MHCLG could instead use alternative years of data, if it felt that funding was more fairly distributed in other years, or it could vary the weights from those recovered through regression analysis on a more discretionary basis to reflect its view of a fair judgement. Government should justify any judgement it takes, which could be on pragmatic or principled grounds. Ideally, this would include using analysis of service provision/quality levels in different areas with different characteristics, but we recognise this may be more feasible for future reviews.

In the meantime, statistical analyses of model specifications and fit are important, and may help guide a decision between similar models. But analysis of past spending cannot deliver an ‘objective’ measure of spending needs, and any approach will still rely on judgements that are subjective.

Regression model

MHCLG proposes to regress cost-adjusted net expenditure per client group on various controls. Specifically, it proposes to calculate a simple average of an LA’s net current expenditure for all Foundation Formula services over the three latest available years (2021–22 to 2023–24), to divide through by ACAs to adjust for differences in input costs, and then to divide by the three-year average of the client population of each LA.

Assessing councils’ needs for *net rather than gross expenditure* means that income from sales, fees and charges (SFCs) is accounted for implicitly as a resource. This reflects that some services are able to partially fund their own needs through the use of fees and charges, which may be appropriate. An alternative to this would have been to estimate gross spending needs and SFCs income separately, although this would likely increase complexity and would only improve robustness if the factors that would be included in the spending and SFCs formulas differed significantly. Given the weight government proposes

to place on simplicity and transparency, it is reasonable to focus on net expenditure.

Focusing on drivers of differences in *per-client spending* is also reasonable. This is likely to be better than regressing total spending on a series of controls, as we would expect population to be the largest driver of differences in total spending. Indeed, population varies so much between councils (e.g. fewer than 40,000 in Rutland to more than 1.5 million in Kent) that it is inevitable that population will drive nearly all differences in overall spending levels, even if other factors such as deprivation were highly significant drivers of variation in spending needs per person. However, whereas a regression with total spending as the dependent variable would give more weight to LAs with higher total spending, using per-client spending implicitly gives equal weight to all LAs. Levels of per-capita spending in more and less populous areas may not be equally informative. A reasonable alternative would be to weight observations in the regression by, for example, client group size. **We recommend consideration is given to the implicit weights applied to observations in regression analysis.**

In constructing the measure of spending, taking a simple average across years (without first expressing figures in real terms) implicitly gives more weight to later years in which councils will have faced higher nominal prices. It is not clear that this is intended or desirable. **We recommend that spending figures are expressed in real terms before averages are taken across years.** This should be a straightforward adjustment to make using, for example, the GDP deflator. This may also be relevant for other spending needs formulas.

We agree with the decision taken to exclude the Isles of Scilly from the regression, given its unique circumstances and special status within the local government finance settlement. There may also be a case for excluding the City of London, which is very small and unusual in some respects. MHCLG also proposes to exclude LAs from the estimation altogether if they are missing data for some of the three years. However, this means throwing away some data unnecessarily, and it may not be appropriate to repeat this kind of exclusion in future years, given that a greater share of LAs are likely to undergo reorganisation in the coming years. We might be particularly concerned if the LAs excluded account for a non-trivial proportion of spending or population nationally (e.g. Birmingham) or if they differ systematically from other LAs (which may be true if, for example, financial difficulties make returning outturn data more difficult). **We recommend that an alternative approach is taken to missing data in any spending needs regression.** The simplest way to include

LAs with some missing years of data in the regression would be to calculate average spending across years for which data are available, but to place less weight on these observations, given that they are based on fewer years and so are less informative.

The proposed approach of **regressing average spend over several years on a set of non-time-varying controls** is effectively a ‘between estimator’.

Estimation relies only on the variation between LAs, and not over time. An alternative model where authority-by-year was the unit of observation would potentially allow estimation to exploit both within- and between-authority variation. This would have several further advantages: it would make including observations for LAs with some missing data straightforward, it could account for changes in client group sizes over time, and if there had been substantial cost growth between years, this could be reflected through the use of time-varying ACAs or the inclusion of year dummies. Including interaction terms (between controls and year dummies) would then allow for tests of whether there were trends over time in these relationships. If there have been substantial changes in spending patterns over time, failing to account for these would risk reflecting out-of-date relationships in future funding.

MHCLG does propose exploring creating a panel dataset, and describes wanting an ACA that varies over time (to avoid this being captured in the fixed effect) as well as requiring time-varying independent variables (which would then need to come from a source other than the Census). **In the long run, we recommend exploring this option as it would be likely to be more robust, at least in the context of a funding system which hasn’t responded to changes in local circumstances.** Including time-varying independent variables would be preferable; currently, the proposed model assumes that these are fixed, but they are measures relating to one point in time. We are relatively less concerned about ACAs being fixed over time; fixed ACAs would be included in the fixed effects for each LA, but MHCLG is primarily interested in the coefficients on the independent variables.

We recommend two additional sensitivity checks are carried out to understand how sensitive estimates are to:

- **the inclusion of specific years of spending data**, especially 2021–22. Spending in 2021–22 was still significantly affected by the COVID-19 pandemic, with particular variation in how councils’ income from SFCs held up. This may also suggest how robust the estimates are likely to be to being rolled forward a year.

- **different approaches to splitting spending by tier.** MHCLG proposes to estimate separate foundation formulas for upper- and lower-tier services (and authorities), with single-tier LAs included in both regressions. To implement this, they propose to split the spending of single-tier LAs on 'unclassified' service lines between upper- and lower-tier spending measures and models in proportion with the average split observed in two-tier areas. However, if the estimated coefficients vary between the upper- and lower-tier formulas, there might be unitary authorities that would gain/lose from having more spending allocated through one formula compared to another. Most straightforwardly, does tweaking the tier split by some percentage in either direction make a substantial difference to the overall needs share of any unitary authorities?

In addition, we suggest MHCLG may wish to undertake further exploratory analysis to understand:

- **whether the split between upper and lower tiers varies a lot between county areas.** If it does, then national averages are likely to be sensitive to the addition/exclusion of one area or to reorganisation, which would not be desirable.
- **whether per-client spending varies systematically with client group size.** If there are non-linearities in per-client spending by client group size, it may then be appropriate to consider including client group size and potentially some higher-order terms in the model.
- **how ACAs vary with deprivation.** If there was a strong relationship between control variables and ACAs, then using a cost-adjusted measure as the dependent variable complicates interpretation of the coefficient.

Needs drivers and model selection

On choosing variables for potential inclusion in the model, it is reasonable to exclude those which are in councils' direct control. For the present exercise, the strongest justification for this is to avoid controlling for things in councils' direct control if they are likely to measure outcomes of councils' policies (and therefore their past funding). If this was a one-off exercise, there would be no risk of creating perverse incentives for councils as they would not be able to manipulate historic data. If MHCLG plans to keep funding up to date, much more careful consideration is needed over the extent to which metrics used to distribute funding reflect metrics that LAs have some influence over in the medium or longer term. This interacts with the design of any future system resets, and incentives for councils to drive down needs.

The documentation describes that four potential needs drivers were considered for inclusion in the Foundation Formula:

- **IMD2019 average score.** As discussed in Box 1, this is only one potential measure of deprivation, and other measures would, for example, give relatively more weight to smaller pockets of deeper deprivation. There is a subjective judgement involved in selecting this measure specifically.
- **Proportion of residential population with low English proficiency.**
- **Proportion of residential population with low qualifications.** Both low English proficiency and low qualifications might affect demand for some services (e.g. adult education) and the cost of delivering a wider range of services (e.g. needing to provide things in multiple languages). However, they are also likely to affect residents' labour market experiences and may correlate with deprivation. More concerningly, they may represent barriers to accessing services currently, which might imply greater *unmet* need and perversely be associated with lower per-client spending.
- **Proportion of one-person households.** This may be accounting for the fact that some services are delivered to households, rather than individuals, so having more households per resident (smaller average households) increases per-resident demands for these household services. **If this is the intention, we would recommend including a control for average household size, instead of the proportion of households that are one-person.**

In communicating this work to a wider audience, it would be helpful to explain the rationale behind each measure that is proposed for inclusion, any other variables which have been considered and ruled out, and the criteria used, such as relevance, frequency and timeliness. For instance, it would be helpful to understand whether any of the following have been considered:

- density and sparsity;
- population age structure;
- other variables from previous RNFs (e.g. road lengths, traffic flows, benefit receipt).

We understand that an exhaustive selection approach was considered for selecting the model. This is preferable to using forward selection (starting with the most parsimonious and adding variables in turn, retaining the new variables if they are statistically significant) because, using the latter approach, the order in which variables were added would matter. However, there are inevitably still subjective judgements involved in determining which variables to test for potential inclusion. See Box 2 for a further discussion of ways to compare the

overall performance of different models, and the implicit assumptions behind some common measures.

As well as comparing overall model fit between specifications, we suggest checking how sensitive the estimated spending needs shares for individual LAs are to including a different set of controls.

It is important in determining how robust the model is to including additional regressors not only whether this shifts the model's R -squared, but whether this makes any significant difference for individual LAs. For example, inclusion of a variable may not affect estimates much for a large bulk of the distribution, but may for a few LAs with extreme characteristics. It would not be appropriate to include such a variable if the apparent relationship was only being driven by those extreme values, and hence potentially idiosyncratic factors, as including the control in this case would risk 'over-fitting'. Provided there is still evidence of a relationship among the bulk of LAs, it may be appropriate to include a variable. MHCLG could pay more attention to the sensitivity of results at 'extremes', while being wary of overfitting.

We have some further minor comments on the presentation of regression results:

- As well as the residual sum of squares (RSS), the command *regsubsets* also returns a model's R -squared, adjusted R -squared, C_p and Bayesian information criterion (BIC). These could also be reported.
- With only one regressor, the F -statistic is equal to the square of the t -statistic.
- Ideally, results on significance would be given to a higher degree of precision (three decimal places).
- The information provided only includes regression results for the deprivation-only model. It would be preferable to include results from alternative models as well.
- The explanatory power of the preferred model is fairly weak, with adjusted R -squared of 0.13 and 0.17 for the two tiers. It is important to be upfront about this.
- A simple scatter plot of deprivation against per-client spending is likely to aid wider understanding of the strength of the relationship and the degree of linearity, and including this in public communications would aid transparency. Ideally, variations would be included both with and without cost adjustment.

The provided documentation suggests that ultimately, MHCLG proposes to take a 'judgement-based approach to selecting which variables to include in the final

regression model’ and they are minded to have a simple univariate model with the only regressor being the IMD2019 average score of an LA. We understand this to mean that MHCLG proposes to take the estimated coefficient on deprivation from the model, and to then estimate an area’s needs share based on this average relationship between per-client spending and deprivation and each area’s average score. Importantly, this will replicate the average relationship between per-client spending and deprivation in the new needs shares. **We recommend MHCLG be upfront with stakeholders about the subjectivity in this judgement-driven approach.**

Box 2. Comparing models using the root mean square error

Minimising the root mean square error (RMSE) is one way to compare the performance of different models. Specifically, this minimises the average difference between an area’s total spending and the ‘predicted’ value based on only the selected independent variables (and the ACA and client group size). However, the regression model itself is aiming to predict *cost-adjusted per-client* spending; it would be appropriate to report the RMSE without reflating by the ACA and client group size. This would have a clearer interpretation; it would represent the ‘typical’ prediction error in the same units as the dependent variable (i.e. cost-adjusted pounds per-client).

It is also helpful to think about what the RMSE measure is doing. Squaring before taking the mean gives proportionately greater weight to larger errors; taking the root then just puts the term into more easily interpretable units but doesn’t re-rank the models. The RMSE is more sensitive than some other measures to occasional large errors. Another reasonable alternative would be the mean absolute error, which may be more appropriate if the cost of an error is proportional to its size, rather than its square. The choice of criteria does embed a value judgement.

It might also be helpful to compare the RMSE with the standard deviation of the actuals (in this case, cost-adjusted per-client spending). The latter is equivalent to the RMSE if you used mean spending for every area, instead of your fitted values. The proportional difference between the RMSE and the standard deviation of the actuals is how much better your model does than just taking average spend.

This also makes clear why comparing RMSEs *before* reflating would be preferable. Calculating the RMSE before reflating gives equal weight to each LA (unless weights are used in the regression modelling, in which case they should also be applied here). Calculating the RMSE *after* reflating gives relatively more weight to errors for LAs with higher ACAs and client group sizes. The documentation mentions that MHCLG takes no account of whether the models perform better for certain classes or types of authority, but by reflating before calculating the RMSE, they are implicitly preferring models which work better for larger LAs.

When comparing log-level and level-level specifications, it is correct to say that comparing these would be inconsistent as the errors are measured in different units. However, the ACAs and client group sizes you are applying do not differ between models. It would be appropriate to take the exponent of the errors from the log-level model, and then to compute the RMS of these.

Client groups

Instead of using resident population, MHCLG proposes to estimate the size of the 'client group' eligible for a given service. This is a reasonable approach to take, and is preferable to using only residents if non-residents are thought to contribute meaningfully to demand for councils' services, or to their ability to raise revenues through SFCs. The proposals to use resident population for the Fire and Rescue formula, and LA-maintained road length in kilometres for the Highways formula, seem reasonable, although we have not reviewed these formulas in any detail as part of this review.

However, we have concerns about the proposed calculation of the client group for the upper- and lower-tier Foundation Formulas: the sum of the resident population, gross commuter inflows and average daily gross visitor inflows. These different types of client are currently given the same weight. This means the demand for services covered by this formula is assumed to be the same for day visitors and commuters as it is for residents – which, in our judgement, is not a reasonable assumption. It would be more appropriate to use different (likely lower) weights for non-resident client groups. One alternative would be to include commuter flows and visitor numbers as characteristics in the regression analysis used to construct the Foundation Formula. Otherwise, the weights could be based on judgement, with a justification provided for the chosen weights. In setting these, MHCLG could consider the different services within the Foundation Formula that different groups may use; residents may use home

refuse, leisure centres and housing services, for instance, while commuters and day visitors may generate more commercial chargeable waste or parking income. Importantly, as well as adding to service demands, additional ‘clients’ may also increase income-generating capacity. A regression based on net expenditure would already implicitly account for SFC revenues, but if setting judgement-based weights, it would be important to consider potential contributions to income generation.

Indeed, in the documentation provided, MHCLG recognises that commuters and tourists are likely to use some services such as waste services or cultural facilities at different levels of intensity compared with residents, and states that the components of daytime inflow would ideally be weighted to reflect the marginal need of each group relative to the resident population. MHCLG is still formalising the process for estimating these weights. **This will be important, and is something we recommend MHCLG further develop.** In our view, it would be preferable to set lower weights (below 1), even if these had to be based on judgement rather than being empirically grounded.

We are not persuaded conceptually by the use of gross commuter inflows. From discussions with MHCLG, we understand that the purpose of accounting for commuters is to redistribute some of their demand for services from where commuters live to where they work, rather than because it is assumed that commuting across LA boundaries increases an individual’s overall service demand. However, the use of gross commuter flows gives extra weight to those commuting across LA boundaries: someone living and working in one LA area is counted just once; whereas someone living in one and working in another LA area is counted twice, contributing equally to the assumed demand for services in both LAs. This would tend to inflate estimated need for services in areas where gross commuter flows across LA boundaries are high: this includes areas with many small LAs and/or where jobs and their associated workers cluster in different LAs (e.g. high-skilled jobs in LAs covering city centres and their workers in LAs covering leafy suburbs). Moving to net commuter flows would address this issue, shifting assumed demand across LA boundaries, but not inflating it in areas with high gross but low net commuting.

However, we recognise MHCLG’s concerns that while commuters and visitors are weighted the same as residents, moving to net commuter flows would likely lead to an underestimate of the relative needs of areas with high net commuter outflows. This is because, in effect, those commuting out are assumed to require no services from the LA of their residence (given the equal weight applied to net

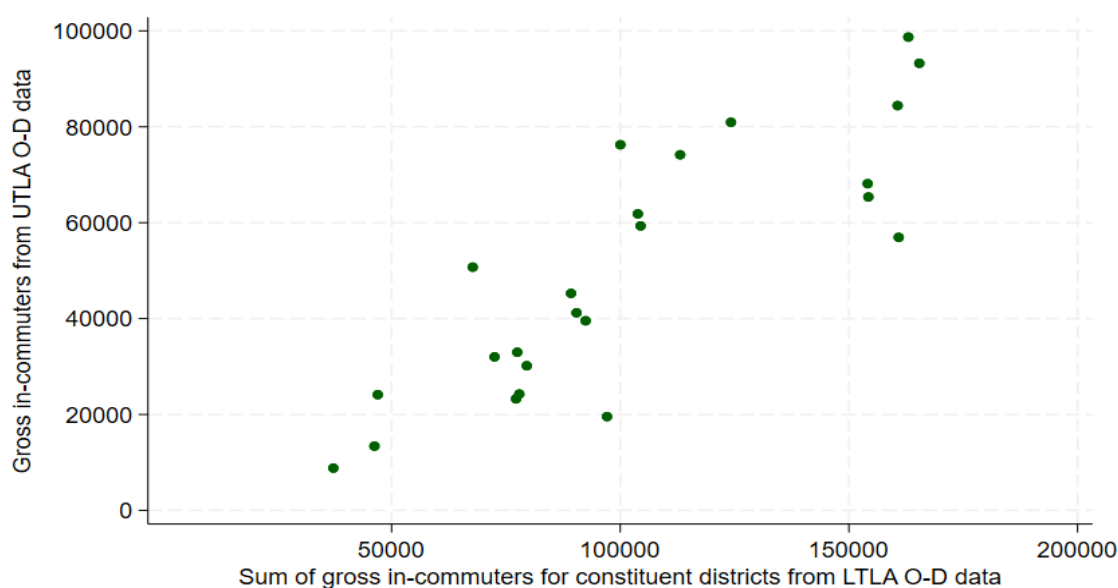
commuters and residents). Using gross rather than net commuter flows avoids this problem as out-commuters are not netted off an LA's residential population.

In essence, therefore, using gross rather than net commuter flows helps offset issues caused by weighting commuters equally with residents, helping prevent the underestimation of demand in areas with high net out-commuting. But at the same time, it leads to the overestimation of demand in areas with high gross but low net commuter flows (such as areas with lots of small LAs and differentiated job and residential locations). While commuters (and visitors) are weighted equally with residents, the decision of whether to move from gross to net commuters involves trading-off two conflicting biases.

We therefore recommend using both different weights for non-resident client groups, and moving to net as opposed to gross commuter flows, together. In the short term, we recommend MHCLG test the sensitivity of spending needs estimates and funding allocations to making these changes. This will indicate the extent to which the current approach may be biasing needs estimates. We recognise it may be the medium term before a move to weighted non-resident client groups and net commuter flows can be made, given the need to consult on a change that could significantly change allocations for some LAs.

The proposed approach to adjust origin–destination data to reflect council mergers is sensible. However, this highlights an important feature of origin–destination commuting data. As discussed above, measures of gross commuter flows depend on the level of geography. In particular, between-district, within-county commutes add to measured gross commuter flows for districts but not for their constituent counties. This means that commuter flows for county areas will differ from the sum of flows for the same districts, as shown in Figure 5 for gross in-commuters. After unitarisation, a newly formed unitary authority would have lower gross commuter flows (and a smaller client group) in the lower-tier Foundation Formula than the sum of the flows that would be measured for the former districts. As a result, LA reorganisation in one area would affect relative needs shares and funding allocations for all other authorities, and this is undesirable. **We recommend that consideration is given to how this sensitivity to LA reorganisation can be mitigated against.**

Figure 5. Gross in-commuters to 2021 counties and sum of gross in-commuters for constituent districts



Note: Gross in-commuters for county areas from ODWP01EW_UTLA, compared to simple sum of gross in-commuters for the district councils within the same areas from ODWP01EW_LTLA.

Source: Based on Nomis [origin–destination workplace data from Census 2021](#).

Applying lower weights for commuters than residents, and using net rather than gross flows, would mitigate this problem. In particular, whereas gross commuter flows for county areas will differ from the sum of flows for the same districts, for net commuter flows, they equal the sum of flows, providing a further argument for preferring the use of net over gross commuter flows.

We share MHCLG’s concerns about relying on commuting patterns measured at the Census 2021, which might reflect temporary disruptions as a result of the COVID-10 pandemic and e.g. furlough and home-working. **In the short term, we suggest MHCLG considers using commuter data from Census 2011 instead of Census 2021.** While these data would be more out of date in one sense, they may still be a better guide to commuting flows than Census 2021, given significant concerns about the quality of the data from the latter, and the persistence in economic geography over time. In the longer term, it may be possible to improve on this using, for example, aggregate mobile phone data to proxy people’s location of residence and work. Indeed, over the last decade, ONS has considered the potential use of such data to produce more timely measures of travel-to-work data, although it is not clear whether this research is ongoing. **We suggest MHCLG considers incorporating any more timely data on travel-to-work patterns as these become available.**

MHCLG proposes to estimate visitor numbers based on figures from the Great Britain Tourism Survey. While these are classified as Official Statistics in Development, this is likely to be the best data source available. Three-year averages will help with sample sizes for small LAs, and it is a reasonable approach to draw on county-level data to derive estimates of authority-level visit and trip volume, and then to use the newest authority-level data when those are made available. More specifically, MHCLG proposes to use 2021–23 county-level totals, apportioning these within-county based on 2017–19 within-county shares. We would have additional confidence in the proposed approach if there were little difference in county-level patterns between 2017–19 and 2021–23, and if results were not sensitive to the choice of period. **We suggest that MHCLG checks whether estimates are robust to instead using 2017–19 authority-level data.**

Of the three available measures of domestic day visits, we agree with MHCLG's proposal to use the 'TDV' definition, which seems to strike an appropriate balance. In communicating this choice, it would be helpful to link this to the rationale for including day trippers as a client group, for example, whether they generate waste, noise pollution, require parking, attend LA-funded events and attractions, etc. **We suggest that MHCLG tests the sensitivity of results to using different definitions of day visitors.**

MHCLG proposes not to include a measure of foreign visitors in the client group or daytime population on the basis that there are no official LA-level data available, and including the measures that are available did not have a significant impact on the distribution of total assessed need. This is reasonable, although it may be worthwhile to collect better data on foreign visitors in the long run, particularly as impacts may be concentrated in some specific areas.

To note, the table in the section of the documentation on 'Client Group Data' suggests that high levels of commuters may generate new demand for office space, and therefore add to demand for planning services. However, this is about having an *increasing* level of commuters over time (and rising demand for office space), not to having a high number of commuters per se.

Recommendations: spending needs

Short term

Consider carefully the implicit weights applied to observations in regression analysis, which may differ when the dependent variable is transformed.

Express spending figures in real terms before averages are taken across years.

Carry out further checks to understand how sensitive the estimates are to the inclusion of specific years in expenditure-based regressions, or to taking different approaches to splitting spending by tier.

If minded to include a control for the proportion of one-person households in the Foundation Formula, consider using average household size instead.

Test sensitivity to using different weights for non-resident client groups, and moving to net as opposed to gross commuter flows.

Consider using commuter data from Census 2011, instead of Census 2021.

Check whether estimates are robust to using 2017–19 data from the Great Britain Tourism Survey, and to using different definitions of day visitors.

Medium term

Include net as opposed to gross commuter inflows in the Foundation Formula client group.

Set different weights for non-resident client group populations, even if these must be based on judgement.

Be transparent with stakeholders about the limitations of an expenditure-based approach, and justifying the choice of years included.

Take an alternative approach to missing data in spending needs regressions to avoid dropping information unnecessarily.

Report how sensitive the estimated spending needs shares for individual LAs are, and not only the overall model fit, when comparing models.

Longer term

Consider collecting subcouncil-level data for non-social-care services to support more robust non-social-care spending needs assessments.

Explore creating a panel dataset for estimating spending needs regressions.

Consider ways to make aggregate client groups in the lower-tier Foundation Formula less sensitive to reorganisation.

Incorporate any more timely data on travel-to-work patterns as these become available.

Control totals

Having estimated relative needs for spending on different sub-blocks through separate service-specific relative needs formulas (RNFs), MHCLG then proposes to apply weights to each RNF to arrive at a single overall assessment of relative need for each LA. MHCLG intends that these weights, or ‘control totals’, will reflect the proportion of spending that local government as a whole currently commits to different services.

This overall approach is reasonable if the view is taken that the current allocation of spending across services is consistent with the expectations of service provision and funding made available. The current allocations reveal LAs’ views of the appropriate allocation across services given the various constraints they face. However, varying the totals on a more discretionary basis could be justified if government was of the view that there should be a shift in emphasis in council spending, for instance that there should be more spending on non-statutory or preventative services or to reflect policy decisions. Relying on historic data to set control totals also means there will be some lag between the year on which control totals are estimated (2023–24) and the year for which they are being used to allocate funding (2026–27). It would also be legitimate to vary from these actual historic spending shares if MHCLG had reason to believe that spending needs for different services will have evolved differently over the three years between 2023–24 and 2026–27. **We recommend that MHCLG considers whether it should vary control totals from historic spending shares, to reflect either evolving demands or to support shifts in patterns of spending.**

A related and important issue not mentioned in the documentation available to us is whether MHCLG intends to use fixed weights or changing weights for different service blocks when estimating overall spending needs after 2026–27. This matters because one might expect the need for different service areas to be growing more or less quickly over time due to demographic or socio-economic changes. A decision needs to be taken as to whether to fix the notional funding shares for each RNF service block for the duration of a multi-year settlement, or whether they should change as expected costs for different RNF service blocks evolve differently. These changes could be set at the start of the multi-year settlement, providing multi-year clarity over funding for councils, but allowing total needs assessments to reflect, for example, an expected rise in share of budgets for social care. This would also potentially reduce the scale of change (and hence transitional arrangements needed) at subsequent multi-year settlements.

It should also be noted that this approach (basing control totals on national shares of past spending) also implicitly weights the allocations of different LAs in proportion to their past spending. Areas with higher overall spending will mechanically have more impact on the national share of spending on each service. This may be desirable, particularly as the spending allocations of high-spending LAs may be more informative than those of lower-spending LAs. However, if there are systematic differences in the spending patterns of LAs which gain/lose funding as a result of funding reforms, and each LA continues to allocate spending between services in the way they have in the past, control totals could look very different if they were estimated based on post-reform funding allocations.

We understand that these control totals will initially be based on only the latest available year of data from revenue outturns (2023–24). Using a single year of data in this case is reasonable as the national averages are likely to be little affected by noise in individual councils' spending year-to-year, and this allows estimates to reflect the latest possible year. It would be preferable to use outturn data for 2024–25 rather than for 2023–24 if the former are available in time.

We recommend MHCLG explores how sensitive councils' funding allocations are to the precise control totals used, and how robust these control totals are likely to be over time. This could involve setting control totals in different ways, reflecting for instance:

- earlier years of revenue outturns (particularly 2022–23);
- councils' budgets for 2024–25;

- 2023–24 outturns, but reflecting any *projected* changes in demands/costs of different service blocks based on, for example, ONS population projections for different client groups;
- national average shares of spending if each area spent the same share of funding on each service as in 2023–24, but their total funding was that proposed under the new funding allocations.

As for net expenditure, MHCLG proposes to base the tier split of control totals for ‘unclassified’ service lines between upper- and lower-tier totals in proportion with the average split of spending observed in two-tier areas. However, over time, this split will be based on a smaller sample of LAs as more areas unitarise. This issue only becomes moot if/when all two-tier areas have become unitary.

We recommend that MHCLG considers whether an alternative basis for this tier split will be needed as more areas unitarise.

To note, we have not looked line-by-line at the proposed mapping of lines in the revenue outturn forms to service blocks covered by RNFs. We understand this follows work done as part of the 2018 review and is likely to have been tested with LAs already. This will be important given there may be some variation in where different LAs would report specific items of spending.

Recommendations: control totals

Short term

Explore how sensitive councils’ funding allocations are to the precise control totals used, and how these control totals are likely to change over time.

Medium term

Consider whether control totals should be varied from historic spending shares, to reflect either evolving demands or to support shifts in patterns of spending.

Longer term

Consider whether an alternative basis for this tier split will be needed as more areas undergo reorganisation.

The funding allocation model

The ‘macro model’ describes how councils’ needs shares and the council tax resource adjustment interact to determine final allocations of grant to councils, and their core spending power. The overall design of the proposed model is reasonable and would be a very substantial improvement on the last system in place (i.e. the ‘four block’ model of the late 2000s and early 2010s). It would be more straightforward and transparent, and is likely to produce more rational results, which will be less sensitive to outliers.

Indeed, the proposed approach has several desirable properties, including that any divergence of an area’s actual council tax level from the notional level does affect that area’s *own* spending power. This means areas that set council tax levels above the notional level are not penalised by losing grant funding, and areas aren’t rewarded with extra grant funding for having lower bills. In addition, the actual council tax level set by one council does not directly affect the grant funding provided to any other council, and therefore any other council’s spending power. Of course, the needs (which are all relative) and resources (as measured by the tax base) of every LA do affect the spending power of all other LAs. This is what is implied by a system that tries to assess overall needs and allocate resources accordingly.

The proposed model allows for the potential that the notional council tax be set at different levels. Indeed, the choice of notional council tax level is perhaps the single most important decision that needs to be taken. The choice made will be a political one, reflecting a judgement about the extent to which the system should redistribute funding away from areas with strong council tax bases relative to their share of needs, and towards areas in the opposite position. There is an important trade-off here between aligning funding levels with patterns of spending need, and the incentives any system creates for councils.

Importantly, the level at which the notional council tax rate is set could have implications for the incentives provided to different councils by the system. Councils with a tax rate above the notional rate would have an incentive to grow their tax base whilst councils with a tax rate below the notional rate would have the, somewhat perverse, incentive to reduce the size of their tax base. This is because, for a council with a tax rate that is currently higher than the notional rate, the extra revenue from increasing its tax base by one property would exceed the reduction in grant funding based on the notional rate. Such a council would thus have an incentive to grow its tax base as this would increase its

overall revenues. Conversely, the opposite would be true for a council with a tax rate lower than the notional rate.

While the proposed model allows for less than 100% council tax equalisation (by setting the notional council tax level at below the average actual level), the proposed approach implies that there will be 100% equalisation of spending needs. It would be possible to design a system that did less than 100% equalisation for spending needs. The choice not to allow for less than 100% equalisation for needs should be justified.

Importantly, the council tax resources adjustment only reflects councils' actual ability to raise council tax were they able to set their level of council tax freely. In practice, councils' powers to set council tax rates have long been constrained. As discussed in [Phillips \(2024\)](#), there is a case to remove council tax referendum requirements. If referendum requirements are retained, the common percentage limits for councils of each type could be replaced with limits based on either a percentage or cash-terms increase, whichever was the higher (as has been the case for shire district councils in recent years). There could also be a council tax 'floor' set, below which no referendum limit would apply. Such changes would allow councils that historically set very low council tax rates to raise rates and revenues closer to the national average. Such councils will likely see their funding reduced under an updated system based on assessing revenue-raising capacity using a common notional tax rate, and such changes to referendum rules would give them more flexibility to respond. **We suggest that consideration is given to providing councils whose actual tax rates are substantially below the assumed notional rate with some greater flexibility to increase council tax rates in the coming years so as to avoid sharp reductions in their overall funding.**

Some aspects of the proposed model are not totally clear to us from the documentation provided so far and could usefully be clarified:

- **How does MHCLG intend the system to operate after year 1?** In particular, in between resets, council tax levels could be fixed, or assumed to increase (e.g. in line with council tax referendum limits); council tax bases could be assumed to be fixed, or projected to grow in line with, for example, household projections; and needs shares and control totals could be fixed or assumed to evolve. We believe it would be sensible to update the notional council tax level over time, for reasons discussed in our [Response to 'Local authority funding reform: objectives and principles' consultation by MHCLG](#)

(paragraph 42). Under certain conditions, there are also strong arguments for accounting for population and tax base growth, as discussed in [our response](#) (paragraphs 51–59). We understand that MHCLG will be consulting on some proposals for keeping allocations up to date, and we welcome this.

- **How will combined authorities be treated under any reformed system?** This will become more important over time as further areas benefit from devolution.
- **What funding will be included in the ‘grant’ distributed by the macro model?** We interpret this as meaning all funding inside core spending power other than council tax (i.e. including councils’ settlement funding assessments) plus any additional grants that are being ‘rolled-in’. It may be clearer to explicitly mention that retained business rates revenues (but not future retained growth) are included, if this is the case. It would also be helpful to specify exactly which additional grants are included (e.g. for social care).
- **What approach would be taken if an area’s share of needs and share of notional council tax revenues implied that they should receive negative grant funding?** This is at least theoretically possible under the proposed model.

When presenting the proposed model, we note that it is very hard to explain the distinctive feature of 100% council tax equalisation (i.e. areas get their needs share of total spending power if and only if they set their actual council tax level to the notional rate) with an example with only two LAs. This is because with two LAs, they cannot set distinct levels such that only one of these coincides with the average level. An illustrative example with three LAs may be clearer. It may also aid understanding to provide an illustrative example demonstrating the implications of 0% council tax equalisation (i.e. setting the notional council tax level to 0). Under such a system, LAs would retain all their actual council tax revenue, plus their needs share of any grant. This makes clear that the ‘% equalisation’ is describing the extent to which council tax revenues specifically are equalised, and that even a system with no council tax equalisation would have some adjustment for needs.

Recommendations: the funding allocation model

Short term

Explain the trade-offs involved in decisions over, for example, the notional council tax level, 100% equivalisation for needs, and how key aspects of the system are projected forwards, and explicitly justify the choices made.

Consider allowing some councils (e.g. those whose actual tax rates are substantially below the assumed notional rate, or where the actual tier split is very different to the national average) greater flexibility to increase council tax rates in the coming years.

Glossary of technical terms

Annual Survey of Hourly Earnings (ASHE)

A survey that provides information about the levels, distribution and make-up of earnings and paid hours worked for employees in all industries and occupations.

Area Cost Adjustment (ACA)

A methodological approach used to measure local variation in the cost of delivering public services across different geographic areas.

Area of Town Centre Activity (ATCA)

A settlement of over 10,000 people.

Billing Authority (BA)

A local council responsible for collecting council tax and business rates from residents and businesses in its area.

Council Tax Support (CTS)

Also known as Local Council Tax Support (LCTS). A financial assistance scheme provided by local authorities to help low-income households pay their council tax bills.

Household Reference Persons (HRPs)

The individual within a household who is recognised as the main economic contributor or decision maker for the purposes of collecting statistics.

Index of Multiple Deprivation (IMD)

The official measure of relative deprivation of different areas in England, combining a wide range of indicators evaluating living conditions.

Labour Cost Adjustment (LCA)

A factor in the ACA which aims to measure the difference in the cost of labour between local authorities. See 'Area Cost Adjustment (ACA)'

Lower Super Output Areas (LSOAs)

A geographical area used to report census and other statistical data, comprising of between 400 and 1,200 households and a resident population typically between 1,000 and 3,000 persons.

National Travel Survey (NTS)

A survey of households of personal travel by residents of England within Great Britain.

Ordinary Least Squares (OLS)

A statistical method used to estimate relationships between different variables, finding the best-fitting straight line through a set of data points by minimising the sum of the squared differences between the observed and predicted values.

Rates Cost Adjustment (RCA)

A factor in the ACA which aims to measure the difference in the cost of property rates / rents between local authorities. See 'Area Cost Adjustment (ACA)'.

Relative Needs Formula (RNF)

One of a series of formulas which calculates a share of relative need for each local authority for a particular service or group of services.

Root Mean Square Error (RMSE)

A measure of the average difference between the predicted values of a statistical model and the observed values. It can be used to evaluate how well a model fits the observed data.

Subjective Analysis Return (SAR)

A survey of local government revenue and expenditure, completed by a sample of authorities in England every 3 years.